

[illegible]

10-02-01

PTO/SB/05 (03-01)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Attorney Docket No.	294518002US1
---------------------	--------------

<i>First Inventor</i>	Edward Balassanian
-----------------------	--------------------

<i>Title</i>	APPLICATION SERVER
--------------	--------------------

Express Mail Label No.	EL669108357US
------------------------	---------------

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Box Patent Application
Commissioner for Patents
Washington, DC 20231

1. ☐ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages
(preferred arrangement set forth below)
- Descriptive title of the Invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table,
or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets
5. ☐ Oral or Declaration [Total Pages
- a. ☐ Newly executed (original or copy)
- b. ☒ Copy from a prior application (37 CFR 1.63 (d))
(for a continuation/divisional with Box 18 completed)
- i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s)
named in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (*Appendix*)
8. Nucleotide and/or Amino Acid Sequence Submission (*if applicable, all necessary*)
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies), or
- ii. ☐ paper
- c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATIONS PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R. §3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☒ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Request and Certification under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35
or its equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No: 09 / 040,972 filed March 18, 1998

Prior application information: Examiner Anthony Nguyen-Ba

Group / Art Unit: 2122

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

☐ Claims the benefit of _____ Application No.

17. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

or ☐ Correspondence address below

25096

PATENT TRADEMARK OFFICE

Name (Print/Type)	Maurice J. Pirio	Registration No. (Attorney/Agent)	33,273
Signature	Maurice J. Pirio	Date	9/26/01

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Box Patent Application, Washington, DC 20231.**

EXPRESS MAIL NO. EL669108357US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Present Application

Applicant : Edward Balassanian
Filed : October 1, 2001
For : APPLICATION SERVER
Docket No. : 294518002US1

Prior Application

Application No. : 09/040,972
Filed : March 18, 1998
Art Unit : 2122

Commissioner for Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

Sir:

Please amend the application as follows:

In the Specification:

Please insert the following paragraph before line 3 of page 1:

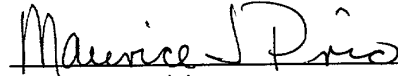
CROSS-REFERENCE TO RELATED APPLICATION(S)

This application is a continuation of U.S. Patent Application No.
09/040,972, filed March 18, 1998, currently pending.

REMARKS

Applicant respectfully requests consideration of this application and its early allowance.

Respectfully submitted,
Perkins Coie LLP



Maurice J. Pirio
Registration No. 33,273

P.O. Box 1247
Seattle, Washington 98111-1247
(206) 583-8888
Fax: (206) 583-8500

0968704-100101

APPLICATION SERVER

FIELD OF THE INVENTION

The present invention relates to computer operating systems and, in particular, to a server architecture providing application caching and security verification.

BACKGROUND OF THE INVENTION

09965704-100104
The growth of the Internet's importance to business, along with the increased dependence upon corporate networks, has created a demand for more secure and efficient computer systems. The traditional solution to this problem has been to depend upon improvements in hardware performance to make up for the performance penalty that is typically incurred when a computer system is made more secure and stable. Increased interconnectivity has also created a need for improved interoperability amongst a variety of computers that are now connected to one another. One solution to the problem of the variety of computers interconnected via the Internet and corporate networks has been the development of portable architecture neutral programming languages. The most widely known of these is Java, though, there are numerous other architecture neutral languages.

20 Architecture neutral programming languages allow programs downloaded from a server computer to a client computer to be interpreted and executed locally. This is possible because the compiler generates partially compiled intermediate byte-code, rather than fully compiled native machine code. In order to run a program, the client machine uses an interpreter to execute the compiled byte-code.

25 The byte-codes provide an architecture neutral object file format, which allows the

00963704-1004

code to be transported to multiple platforms. This allows the program to be run on any system which implements the appropriate interpreter and run-time system. Collectively, the interpreter and runtime system implement a virtual machine. This structure results in a very secure language.

5 The security of this system is premised on the ability of the byte-code to be verified independently by the client computer. Using Java or some other virtual machine implementing technology, a client can ensure that the downloaded program will not crash the user's computer or perform operations for which it does not have permission.

10 The traditional implementations of architecture neutral languages are not without problems. While providing tremendous cross platform support, the current implementations of architecture neutral languages require that every client performs its own verification and interpretation of the intermediate code. The high computation and memory requirements of a verifier, compiler and interpreter restrict
15 the applicability of these technologies to powerful client computers.

 Another problem with performing the verification process on the client computer is that any individual within an organization may disable some or all of the checks performed on downloaded code. The current structure of these systems makes security management at the enterprise level almost impossible. Since
20 upgrades of security checking software must be made on every client computer, the cost and time involved in doing such upgrades makes it likely that outdated or corrupt copies of the verifier or interpreter exist within an organization. Even when an organization is diligent in maintaining a client based security model, the size of the undertaking in a large organization increases the likelihood that there will be
25 problems.

There is a need for a scalable distributed system architecture that provides a mechanism for client computers to request and execute applets in a safe manner without requiring the client machines to have local resources to compile or verify the code. There is a further need for a system in which the applets may be cached in
5 either an intermediate architecture neutral form or machine specific form in order to increase overall system performance and efficiency.

SUMMARY OF THE INVENTION

In accordance with one embodiment of the invention, an applet server
10 architecture is taught which allows client computers to request and execute applets in a safe manner without requiring the client to have local resources to verify or compile the applet code. Compilation and byte-code verification in the present invention are server based and thereby provide more efficient use of resources and a flexible mechanism for instituting enterprise-wide security policies. The server
15 architecture also provides a cache for applets, allowing clients to receive applet code without having to access nodes outside the local network. The cache also provides a mechanism for avoiding repeated verification and compilation of previously requested applet code since any client requesting a given applet will have the request satisfied by a single cache entry.

20 Machine specific binary code is essentially interpreted code since the processor for a given computer can essentially be viewed as a form of an interpreter, interpreting binary code into the associated electronic equivalents. The present invention adds a level of indirection in the form of an intermediate language that is processor independent. The intermediate language serves as the basis for security
25 verification, code optimizations, or any other compile time modifications that might be

necessary. The intermediate form allows a single version of the source to be stored for many target platforms instead of having a different binary for each potential target computer. Compilations to the target form can either be done at the time of a cache hit or they can be avoided all together if the target machine is able to directly

5 interpret the intermediate form. If the compilation is done on the server, then a copy of the of the compiled code as well as the intermediate form can be stored in the cache. The performance advantage derived from caching the compiled form as well as the intermediate depends upon the number of clients with the same CPU.

The novel features believed characteristic of the invention are set forth in the
10 appended claims. The invention itself, however, as well as other features and advantages thereof will best be understood by reference to the detailed description which follows, when read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

15 FIG. 1 is diagram showing the major components which may be used to implement an applet server in one embodiment of the present invention;

FIG. 2a is a table which illustrates the structure of the request format data type;

FIG. 2b is a table which illustrates the structure of the returned code data
20 type.

FIG. 3 is a diagram showing the compilation and transformation of a program module into an applet in a particular form.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, an applet server architecture according to one embodiment of the invention is based on an applet server computer 10 which in turn is connected to client computer A 12, client computer B 14, an external network 16 and an untrusted network 18. The applet server computer 10 connects to client computers 12 and 14, an external network 16, and an untrusted network 18 by means of a network interface 20. Typically this connection will involve one or more of the computers or networks having a connection to the Internet.

The applet server computer 10 accomplishes its objectives by manipulating computer programs in several formats. An applet (e.g. applets 1-3, 25a-25c) is any form of program instructions, whether in binary, source or intermediate format. In the case of this architecture, the applet code can either be a self contained program, or it can be a code fragment associated with a larger application.

Binary format refers to processor specific machine instructions suitable for running natively on a given computing platform (also referred to as "target" because of the concept of "targeting" a compiler to produce binary code for a given processor type).

Source refers to non-binary applet code, generally in the form of higher level languages (i.e. C, C++, Java, Visual Basic, ActiveX, Fortran, and Modula).

Intermediate format refers to a common intermediate byte-code that is produced by compiling a given source code input. The intermediate byte-code need not necessarily be Java byte-code.

Treating applets in this general sense allows client computers 12 and 14 to request not only applications, but portions of applications. Client computers 12 and 14 are thus able to use applet server computer 10 as the equivalent of a loader,

loading in appropriate parts of the application in the form of applets. In turn client computers **12** and **14** can run large applications without requiring that the client computers **12** and **14** have the resources to store the entire application in memory at once.

5 Having the applets delivered from applet server computer **10** allows code in intermediate form to be verified, optimized, and compiled before being transmitted to client computers **12** and **14**. This reduces the amount of work the client computers **12** and **14** have to do and provides a convenient way to impose global restrictions on code.

10 In operation, client computer A **12** transmits a request to an applet server computer **10** requesting an applet in a particular form. The form may be selected from a large matrix of many possible forms that can be recognized by the system. The request specifies the format (source, intermediate, or binary) in which the client wishes to receive the applet. The request may also specify that the applet be
15 verified or have some other transformation operation preformed upon it. Verification, optimization and compression are examples of types of transformation operations. The request is received by the network interface **20** of the applet server computer **10** which passes the request onto the applet server manager **22**.

20 After interpreting the request, the applet server manager **22** checks to see if the requested applet is available in the cache **24**. The cache **24** stores applets in a variety of formats (source, intermediate, or binary). If the requested form of the applet is available in the cache **24** (applet 1 **25a**, applet 2 **25b**, or applet 3 **25c** in this example) the applet server manager **22** instructs the network interface **20** to transmit the applet to requesting client computer A **12**.

If the requested applet is not available in the cache 24, then the applet server manager 22 will attempt to build the requested applet from local resources 26 and one or more transformation operations performed by one or more of the transformers 28. Local resources 26 are comprised of compilers 30a, 30b and 30c and program code modules 32a, 32b, 32c and 32d. The requested applet is built by selecting one or more program code modules 32 and compiling them with one or more compilers 30. Transformer operations may be performed by the verifier 34 or the optimizer 36. After the applet server manager 22 builds the applet, the network interface 20 transmits the applet to the requesting client computer A 12.

10 If the request can not be satisfied by building the applet from local resources 26 and transformers 28, the applet server manager 22 will pass a request for the requested applet to external network 16 and/or untrusted network 18. The applet server manager 22 may request the applet in intermediate form or in executable form or it may request the local resources 26 and transformers 28 it needs to complete building the applet itself.

15 The cache 24 is capable of responding to the following commands : GET, PUT, and FLUSH. GET is used to retrieve a given applet from the cache. PUT is used to store an applet in the cache. FLUSH is used to clear the cache of one or more entries. When the cache is unable to locate an item in response to a GET operation, it returns a cache miss. The program which issued the GET command is then responsible for locating the desired form of the applet by other means and optionally storing it in the cache when it is retrieved (using the PUT operation). The FLUSH command will clear the cache of one or more entries and any subsequent GETs for the FLUSHed applet code will result in a cache miss. This is useful if a particular applet needs to be updated from a remote server on a periodic basis.

When using PUT, the program issuing the command specifies a time to live (TTL) in the cache. When the TTL expires, the cache entry is removed by means of a FLUSH operation.

Local resources 26 are comprised of program modules 32 (applets in source form, not the requested form) and compilers 30. The program modules 32 are run through the compilers 30 in order to produce applets in the requested form. The applet server manager 20 may also direct the modules 32 to be processed by a verifier 34 or another transformer such as an optimizer 36. Program modules 32 are program code used to build applets. Program modules 32 may be stored in local resources 26 in source, binary, or intermediate formats. When an applet is built it may require the operation of one or more compilers 30 upon one or more program modules 32. The program modules 32 may be combined and recompiled with previously cached applets and the resulting applet may be also cached for use at a future time. Additionally, program modules 32, compilers 30 and transformers 28 (including verifiers 34 and optimizers 36) may be distributed across a network. The applet server manager 22 may pass requests for the components it needs to build a particular applet back to the network interface 20 which in turn passes the request onto the rest of the network and may include external network 16 and untrusted network 18.

FIG. 3 provides further illustration of how an applet is produced from local resources and transformers. In this illustration the request is for an optimized and verified applet compiled to a machine specific form. A program module 40 is compiled into an intermediate form program module 44 by an intermediate compiler 42. The intermediate form program module 44 is then transformed by an optimizer

46 or a verifier 48. The resulting transformed intermediate form program module 50 is then compiled by target compiler 52 into machine specific code applet 54.

There are two types of compilers used to build applets: intermediate compilers 42 and target compilers 52. The intermediate compiler 42 compiles program modules (source applet code) 40 and produces a common intermediate pseudo-binary representation of the source applet code (intermediate form program module 44). The word pseudo is used because the intermediate form 44 is not processor specific but is still a binary representation of the source program module 40. This intermediate form can be re-targeted and compiled for a particular processor.

Alternatively, the intermediate form 44 can be interpreted by an interpreter or virtual machine that understands the internal binary representation of the intermediate form. A target compiler 52 compiles intermediate applet code 44 into an applet 54 in a processor specific format (binary) suitable for running natively on a given computing platform.

Transformers 56 are programs that take in intermediate code and put out intermediate code. Transformers 56 are generally used for things like verification and optimization. Other transformers might included compressors that identify portions of code that can be replaced with smaller equivalents. Transformers can be matched up to any other component that takes in intermediate code as an input.

These include the cache 24 and the target compilers 52. Global policies for transformers 56 can be implemented which ensure that all applets are run through some set of transformers before being returned to the client.

A verifier 48 is a type of transformer that is able to analyze input code and determine areas that might not be safe. The verifier 48 can determine the level of safety. Some verifiers 48 look for areas where unsafe or protected memory is being

accessed, others might look for accesses to system resources such as IO devices.

Once a verifier **48** determines the portion of unsafe applet code several steps can be taken. The offending code portion can be encased with new code that specifically prevents this unsafe code section from being executed. The unsafe code can be
5 modified to be safe. The unsafe code can be flagged in such a way that a user can be warned about the possible risks of executing the code fragment. The verifier's role can therefore be summarized as determining where unsafe code exists and possibly altering the offending code to render it harmless. Verifiers **48** can operate on any format of input code, whether in source, intermediate or binary form.

10 However, since intermediate code is a common format, it is most efficient to have a single verifier that will operate on code in this format. This eliminates the need to build specific knowledge of various source languages into the verifier. Verifiers **48** are a form of a transformer. Verifiers **48** take in intermediate code and put out verified intermediate code. Verifiers **48** are responsible for identifying non-secure
15 portions of code in the intermediate code and modifying this code to make it secure. Security problems generally include access to memory areas that are unsafe (such as system memory, or memory outside the application space of the applet).

The choice of adding in the verification step can be left up to the client computer **12**, the applet server computer **10** (see FIG. 1), or can be based on the
20 network that the applet originated from. Server managers can institute global policies that affect all clients by forcing all applets to be run through the verifier **48**. Alternatively, verification can be reserved for un-trusted networks (**18** in FIG 1), or it can be left up to the client to determine whether the verification should be performed. In the preferred embodiment, verification level is determined by the applet server **10**.

In this way, a uniform security policy may be implemented from a single machine (i.e., the applet server 10).

Optimizers 46 are another type of transformer program. Optimizers 46 analyze code, making improvements to well known code fragments by substituting in
5 optimized but equivalent code fragments. Optimizers 46 take in intermediate code 44 and put out transformed intermediate code 50. The transformed intermediate code 50 is functionally equivalent to the source intermediate code 44 in that they share the same structure.

Referring again to FIG. 1, policies may be instituted on the applet server 10
10 that force a certain set of request parameters regardless of what the client asked for. For example, the applet server manager 22 can run the applet through a verifier 34 or optimizer 36 regardless of whether the client 12 requested this or not. Since the server 10 might have to go to an untrusted network 18 to retrieve a given applet, it will then run this applet through the required transformers 28, particularly the verifier
15 34 before returning it to the client 12. Since clients 12 and 14 have to go through the applet server computer 10, this ensures that clients 12 and 14 do not receive applets directly from an untrusted network 18. In addition, since the server will be dealing directly with untrusted network 18, it can be set up to institute policies based on the network. A trusted external network 16 may be treated differently than an untrusted
20 network 18. This will provide the ability to run a verifier 34 only when dealing with an untrusted network 18, but not when dealing with a trusted external network 16. In one embodiment, all intermediate code is passed through a verifier 34 and the source of the code merely determines the level of verification applied.

The client 12 is the target computer on which the user wishes to execute an
25 applet. The client 12 requests applets from the server 10 in a specific form. Applets

can be requested in various formats including source, intermediate and binary. In addition, an applet can be requested with verification and/or other compile time operations. Optionally, the client **12** can pass a verifier to the server to provide verification. If the server **10** implements its own security, then both the client and
5 server verifiers will be run. The verifier that is passed from the client to the server is cached at the server for subsequent verification. The client can refer to this verifier by a server-generated handle to avoid having to pass the verifier each time an applet is requested.

Client computers **12** and **14** requesting applet code in intermediate format
10 need to have an interpreter or virtual machine capable of interpreting the binary code in the intermediate format if the applet is to be executed on the client machine.

In the preferred embodiment, requests to the applet server are in a format similar to those of an HTTP header and are comprised of tags and values. In one embodiment, an HTTP GET method is used to make the request (though use of the
15 HTTP protocol is not necessary to implement the present invention). The request is made up of a series of tags which specify the requested applet, the platform on which it is to be run and the type of code (source/intermediate/binary), a verification level and an optimization level. New tags and values can be added to extend functionality as needed and the applet server manager **22** will discard any tag it does
20 not recognize. When the applet server computer **10** returns the requested applet to the requesting client computer **A 12**, it will transmit the request header followed by the applet code. In this instance, the header will additionally include a field which defines the length of the applet code. FIG. 2 provides a table which illustrates the request format and the returned code format.

While this invention has been described with reference to specific
embodiments, this description is not meant to limit the scope of the invention.

Various modifications of the disclosed embodiments, as well as other embodiments
of the invention, will be apparent to persons skilled in the art upon reference to this

5 description. It is therefore contemplated that the appended claims will cover any
such modifications or embodiments as fall within the scope of the invention.

09968704-100101

I claim:

1. A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of the applet out of a plurality forms of the applet, comprising:
 - a) receiving on said server computer a request from a client computer for an applet in a form selected from a plurality forms;
 - b) compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form; and
 - c) transmitting said applet in said selected form to said client computer.
2. The method of claim 1, further comprising the step of:
copying said applet in said selected form to a local cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said selected form.
3. The method of claim 1, further comprising the step of:
transmitting a request to an external resource for supplying said applet in said selected form if said applet can not be compiled from said local resource and directing said external resource to transmit said applet in said selected form to said server computer.

4. The method of claim 2, further comprising the step of:
transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resource, and directing said external resource to transmit said applet in said selected form to said server computer.
5. A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of said applet out of a plurality of forms of said applet, comprising:
- a) receiving on said server computer a request from a client computer for an applet in a specified form selected from a plurality of forms;
 - b) determining whether said applet is stored in said specified form in a local cache and, if so, transmitting said applet in said specified form to said client computer;
 - c) if said applet is not stored in said selected form in said local cache, compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form and transmitting said applet in said selected form to said client computer.

6. The method of claim 5, further comprising the step of:
copying said applet in said selected form to said cache after compiling said
applet from said local resource if said cache does not contain a copy of
said applet in said form.
7. The method of claim 5, further comprising the step of:
transmitting a request to an external resource for said applet in said selected
form if a copy of said applet is not stored in said local cache and said
applet can not be compiled from said local resources, and directing
said external resource to transmit said applet in said selected form to
said server computer.
8. The method of claim 6, further comprising the step of:
transmitting a request to an external resource for said applet in said selected
form if a copy of said applet is not stored in said local cache and said
applet can not be compiled from said local resource, and directing said
external resource to transmit said applet in said form to said server
computer.
9. A method operating on a computer system for generating an applet in
response to a request by a client computer wherein each request for an applet
specifies one form of the applet out of a plurality forms of the applet, comprising:
 - a) receiving on a server computer a request from a client computer for an
applet in a form selected from a plurality forms;

b) compiling an applet program module into an intermediate form program module;

c) transmitting said applet in said selected form to said client computer.

10. The method of claim 9, further comprising the step of:

transforming said intermediate form program module into a transformed intermediate form program module with at least one transformer program.

11. The method of claim 10, wherein said at least one transformer program is selected from the group consisting of verifying computer programs, optimizing computer programs, compressing computer programs, debugging computer programs, usage monitoring computer programs and encrypting computer programs.

12. The method of claim 10, further comprising the step of:

compiling said transformed intermediate form program module into machine specific binary code with a target compiler.

13. The method of claim 11, further comprising the step of:

compiling said transformed intermediate form program module into machine specific binary code with a target compiler.

ABSTRACT OF THE INVENTION

The present invention is an applet server which accepts requests for applets from client computers. A request specifies the format in which an applet is to be delivered to the requesting client computer. The applet server has a cache which it
5 uses to store applets for distribution to client computers. If the specified form of the requested applet is available in the cache, the applet server transmits the applet to the requesting client. If the applet is not available in the cache, the server will attempt to build the applet from local resources (program code modules and compilers) and transformer programs (verifiers and optimizers). If the applet server
10 is able to build the requested applet, it will then transmit the applet to the requesting client computer. If the applet server is unable to build the requested applet, it will pass the request to another applet server on the network for fulfillment of the request.

096274-1004

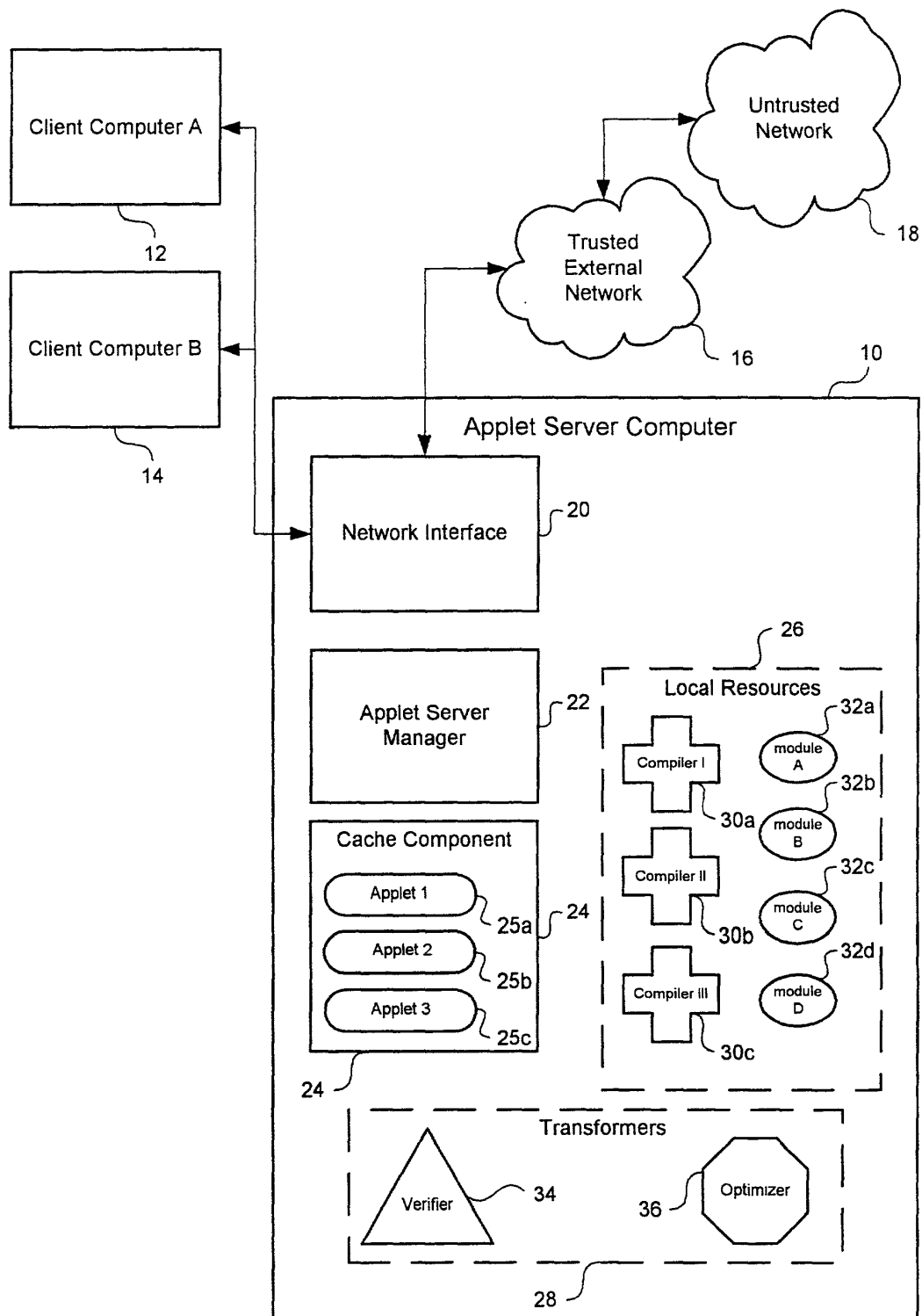


Fig. 1

Request Data Type

Tag	Value
Applet-URL	(String) specifies the name of the requested applet
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86)
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.

Fig. 2A

Code Data Type

Tag	Value
Applet-URL	(String) specifies the name of the requested applet
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86)
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.
Applet Length	(0-2 ³²) specifies the size of the requested applet.
Applet Code	The Requested Applet in the form specified by the request data type.

Fig. 2B

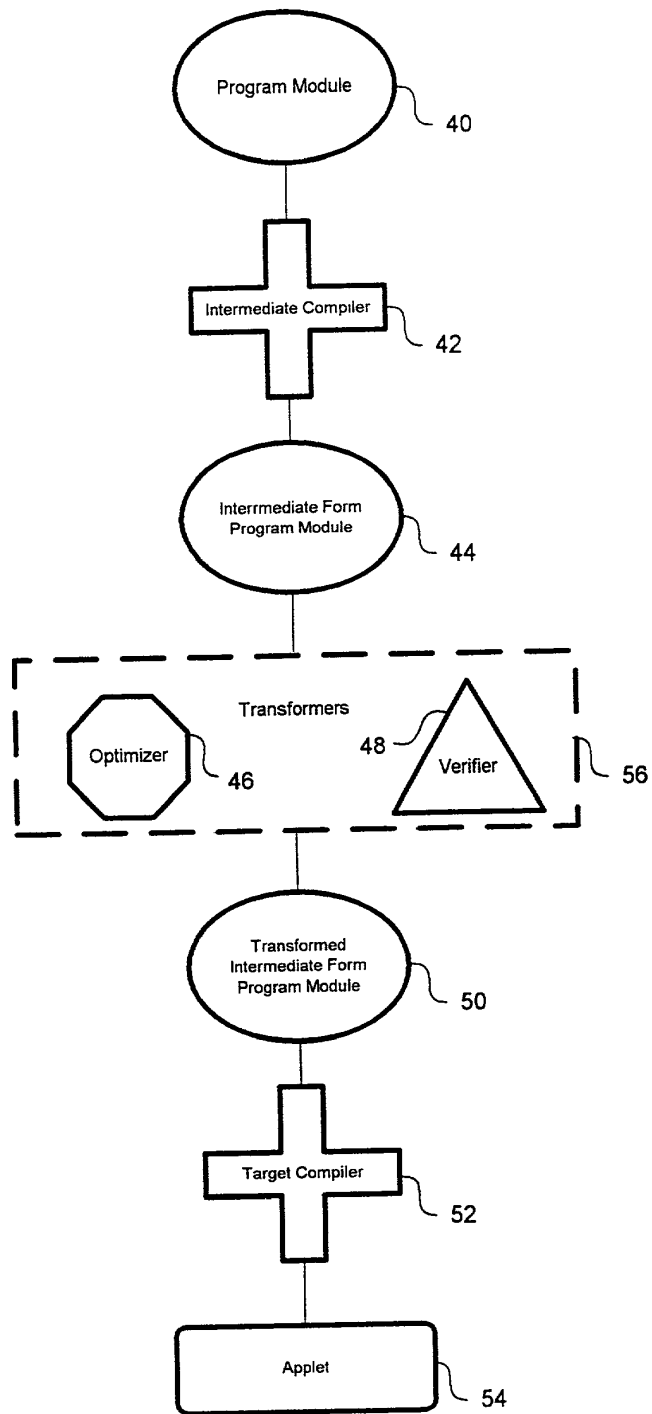


Fig. 3

DECLARATION AND POWER OF ATTORNEY
IN PATENT APPLICATION

Attorney Docket No.: 1598-1

As a below named inventor, I hereby declare:

My residence, post office address and citizenship are as stated below
next to my name;

I believe that I am the original, first and sole inventor (if only one name is
listed below) or a joint inventor (if plural inventors are listed below) of the subject
matter that is claimed and for which a patent is sought on the invention entitled:

APPLICATION SERVER

the specification of which

XX is attached hereto.

 was filed on as U.S. Application Serial
No. (or PCT International Application No.)
and was amended on (if
applicable).

I hereby state that I have reviewed and understand the contents of the
above-identified specification, including the claims, as amended by any
amendment referred to above.

I acknowledge the duty to disclose information which is material to
patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code,
Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate
listed below and have also identified below any foreign application for patent or
inventor's certificate having a filing date before that of the application on which
priority is claimed.

Prior Foreign Application(s):

<u>Number</u>	<u>Country</u>	<u>Date Filed</u>	<u>Priority</u>
_____	_____	<u>Day/Mo/Yr</u>	<u>Yes/No</u>
_____	_____	<u>Day/Mo/Yr</u>	<u>Yes/No</u>

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

<u>Application No.</u>	<u>Filing Date</u>
_____	_____

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Serial Number</u>	<u>Filing Date</u>	<u>Status: Patented Pending/Abandoned</u>
_____	_____	_____
_____	_____	_____

I hereby appoint the attorneys associated with Customer No. 07-1897 to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence and phone calls to:

Gregory P. Silberman
GRAYBEAL JACKSON HALEY LLP
777-108th Avenue NE
Suite 2460
Bellevue, WA 98004-5117
(425) 455-5575

I hereby further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Edward Balassanian USA
Full Name of Inventor Citizenship

12724 NE 94th Ct, Kirkland, Washington 98033
Residence

Same
Post Office Address

 3/18/98
Inventor's Signature Date

09968704-100101

BEST AVAILABLE COPY

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2000

Application or Docket Number

09968704

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	<i>13</i>	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	<i>13</i> minus 20= *	
INDEPENDENT CLAIMS	<i>3</i> minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY

TYPE ☐

OR

OTHER THAN

SMALL ENTITY

RATE	FEE
BASIC FEE	355.00
X\$ 9=	
X40=	
+135=	
TOTAL	

RATE	FEE
BASIC FEE	710.00
X\$18=	
X80=	
+270=	
TOTAL	

CLAIMS AS AMENDED - PART II

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL ADDIT. FEE	

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL ADDIT. FEE	

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

BEST AVAILABLE COPY

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET (FOR USE WITH FORM PTO-875)							SERIAL NO.	FILING DATE			
							APPLICANT(S)				
CLAIMS											
	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			*	*	*	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.
1	1						51				
2		1					52				
3		1					53				
4		1					54				
5	1						55				
6		1					56				
7		1					57				
8		1					58				
9	1						59				
10		1					60				
11		1					61				
12		1					62				
13		1					63				
14							64				
15							65				
16							66				
17							67				
18							68				
19							69				
20							70				
21							71				
22							72				
23							73				
24							74				
25							75				
26							76				
27							77				
28							78				
29							79				
30							80				
31							81				
32							82				
33							83				
34							84				
35							85				
36							86				
37							87				
38							88				
39							89				
40							90				
41							91				
42							92				
43							93				
44							94				
45							95				
46							96				
47							97				
48							98				
49							99				
50							100				
TOTAL IND.	3						TOTAL IND.				
TOTAL DEP.	10						TOTAL DEP.				
TOTAL CLAIMS	13						TOTAL CLAIMS				

* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS

FORM PTO-1360 (REV. 3-78)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/968,704	10/01/2001	Edward Balassanian	294518002US1

25096
PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

CONFIRMATION NO. 2481

FORMALITIES LETTER



OC000000006932772

Date Mailed: 10/18/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$ 370 to complete the basic filing fee for a small entity.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 435.

*A copy of this notice **MUST** be returned with the reply.*

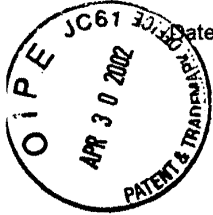
Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

#5 2122

6-18-2

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C., 20231, on:



Date: April 18, 2002

By: Sandy Reisman
Sandy Reisman

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

EDWARD BALASSANIAN

APPLICATION No.: 09/968,704

FILED: OCTOBER 1, 2001

FOR: APPLICATION SERVER

EXAMINER: UNKNOWN

ART UNIT: 2122

CONFIRMATION No.: 2484

RECEIVED
MAY 08 2002
Technology Center 2100

COPY OF PAPERS
ORIGINALLY FILED

**Information Disclosure Statement Within Three Months of
Application Filing or Before First Action - 37 CFR 1.97(b)**

Commissioner for Patents
Washington, D.C. 20231

Sir:

1. Timing of Submission

This information disclosure is being filed within three months of the filing date of this application or date of entry into the national stage of an international application or before the mailing date of a first Office action on the merits, whichever occurs last [37 CFR 1.97(b)]. The references listed on the enclosed Form PTO-1449 (modified) may be material to the examination of this application; the Examiner is requested to make them of record in the application.

2. Cited Information

☐ Copies of the following references are enclosed:

- ☐ All cited references
- ☐ References marked by asterisks
- ☐ The following:

☒ Copies of the following references can be found in parent application Ser. No. 09/040,972 filed March 18, 1998:

- ☒ All cited references
- ☐ References marked by asterisks
- ☐ The following:

☐ The following references are not in English. For each such reference, the undersigned has enclosed (i) a translation of the reference; (ii) a copy of a communication from a foreign patent office or International Searching Authority citing the reference, (iii) a copy of a reference which appears to be

an English-language counterpart, or (iv) an English-language abstract for the reference prepared by a third party. Applicant has not verified that the translation, English-language counterpart or third-party abstract is an accurate representation of the teachings of the non-English reference, though, and reserves the right to demonstrate otherwise.

- ☐ All cited references
- ☐ References marked by ampersands
- ☐ The following:

3. Effect of Information Disclosure Statement (37 CFR 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

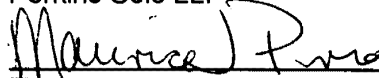
4. Fee Payment

No fees are believed due. However, should the Commissioner determine that fees are due in order for this Information Disclosure Statement to be considered, the Commissioner is hereby authorized to charge such fees to Deposit Account No. 50-0665.

5. Patent Term Adjustment (37 CFR 1.704(d))

- ☐ The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. § 1.704(d).

Respectfully submitted,
Perkins Coie LLP

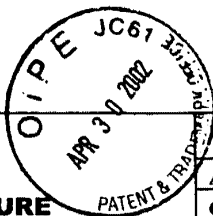


Maurice J. Pirio
Registration No. 33,273

Correspondence Address:

Customer No. 25096
Phone: (206) 583-8888

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(use as many sheets as necessary)

COMPLETE IF KNOWN

Application Number	09/968,704
Confirmation Number	2481
Filing Date	October 1, 2001
First Named Inventor	Edward Balassanian
Group Art Unit	2122
Examiner Name	Unknown
Attorney Docket No.	294518002US1

Sheet 2 of 2

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

AS	Sirer, Emin Gün, "Java-Relevant Articles in the Press," http://kimera.cs.washington.edu/press/index.html [Accessed 10/4/00]
AT	"Project Members" http://kimera.cs.washington.edu/members.html [Accessed 10/4/00]
AU	Emin Gün Sirer, et al., "Distributed Virtual Machines: A System Architecture for Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://kimera.cs.washington.edu February 26, 1998
AV	Emin Gün Sirer, et al., "Design and Implementation of a Distributed Virtual Machine for Networked Computers," University of Washington, Department of Computer Science and Engineering, Seattle, Washington, 17 th ACM Symposium on Operating system Principles, December 1999
AW	Sirer, Emin Gün, "A System Architecture for Next Generation Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://www.dyncorp-is.com/darpa/meetings/gradmeet98/Whitepapers/darpa-wp.html June 26, 1998
AX	Sirer, Emin Gün, http://www.cs.washington.edu/homes/egs/ [Accessed 10/4/00]
AY	Sirer, Emin Gün, "Kimera – A System Architecture for Networked Computers," http://kimera.cs.washington.edu [Accessed 10/4/00]
AZ	Emin Gün Sirer and Brian Bershad, "Kimera Architecture," http://kimera.cs.washington.edu/overview.html [Accessed 10/4/00]
BA	Sirer, Emin Gün, "Security Flaws in Java Implementations," http://kimera.cs.washington.edu/flaws/index.html [Accessed 10/4/00]
BB	Sirer, Emin Gün, "Kimera Bytecode Verification," http://kimera.cs.washington.edu/verifier.html [Accessed 10/4/00]
BC	Sirer, Emin Gün, "Kimera Test Suite," http://kimera.cs.washington.edu/testsuite.html [Accessed 10/4/00]
BD	Sirer, Emin Gün, "Kimera Disassembler," http://kimera.cs.washington.edu/disassembler.html [Accessed 10/4/00]

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

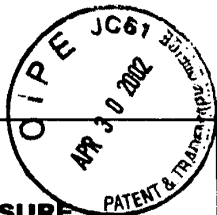
EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).

\\sea_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(use as many sheets as necessary)

COMPLETE IF KNOWN

Application Number	09/968,704
Confirmation Number	2481
Filing Date	October 1, 2001
First Named Inventor	Edward Balassanian
Group Art Unit	2122
Examiner Name	Unknown
Attorney Docket No.	294518002US1

Sheet 1 of 2

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		NUMBER	Kind Code (if known)			
	AA	5,805,829		Cohen et al.	9/8/98	
	AB	5,828,840		Cowan et al.	10/27/98	
	AC	5,848,274		Hambry et al.	12/8/98	
	AD	5,872,915		Dykes et al.	2/16/99	
	AE	5,884,078		Faustini	3/16/99	
	AF					
	AG					
	AH					
	AI					
	AJ					

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
	AK							
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

EXAMINER INITIALS	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published.	T
	AP	"Eliminating Unnecessary Synchronization," http://kimera.cs.washington.edu/synch/index.html [Accessed 10/4/00]	
	AQ	Sirer, Emin Gün, "Kimera Paper Trail," http://kimera.cs.washington.edu/papers/index.html [Accessed 10/4/00]	
	AR	Sirer, Emin Gün, "Java, Extensibility and Security Related Links," http://kimera.cs.washington.edu/related/index.html [Accessed 10/4/00]	

EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).

\\sea_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/968,094	10/01/2001	Edward Balassanian	294518002US1

25096
PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

RECEIVED

OCT 23 2001

PERKINS COIE LLP

CONFIRMATION NO. 2481

FORMALITIES LETTER



OC00000006932772

Date Mailed: 10/18/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$ 370 to complete the basic filing fee for a small entity.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 435.

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

03/28/2002 NROCHA1 00000066 09968704

01 FC:201
02 FC:205370.00 OP
65.00 OP



COPY OF PAPERS
ORIGINALLY FILED

PATENT

I hereby certify that on the date specified below, this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to Box Missing Parts, Commissioner for Patents, Washington, DC 20231.

March 18, 2002

Date

Sandy Reisman
Sandy Reisman

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Edward Balassanian
Application No. : 09/968,704 Confirmation No.: 2481
Filed : October 1, 2001
For : APPLICATION SERVER
Art Unit : 2122
Docket No. : 294518002US1
Date : March 15, 2002

Box Missing Parts
Commissioner for Patents
Washington, DC 20231

RESPONSE TO NOTICE TO FILE MISSING PARTS OF APPLICATION

Sir:

In response to the Notice to File Missing Parts dated October 18, 2001, please find enclosed an Authorization for Extensions of Time Under 37 CFR § 1.136(a)(3) and a copy of the Notice to File Missing Parts for the above-identified application.

Please find enclosed a Petition for an Extension of Time, extending the time for response from December 18, 2001, to March 18, 2002.

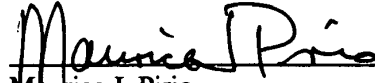
The fees have been calculated as follows:

Basic Fee	\$	370.00
Total Claims (13, 0 extra)		0.00
Independent Claims (3, 0 extra)		0.00
Missing Parts Surcharge		65.00
Total	\$	435.00
Extension-of-Time Fee		460.00
TOTAL	\$	895.00

Enclosed is a check in the amount of \$895.00 for the requisite fees. The Commissioner is hereby authorized to charge any additional filing fees or to credit any overpayment to Deposit Account No. 50-0665. A duplicate copy of this response is enclosed.

Respectfully submitted,

Perkins Coie LLP



Maurice J. Pirio

Registration No. 33,273

MJP:SBR

Enclosures:

- Postcard
- Check No. 1361
- Copy of this Response
- Authorization for Extensions of Time Under 37 CFR § 1.136(a)(3)
- Copy of Notice to File Missing Parts
- Petition for an Extension of Time (+ 2 copies)

PERKINS COIE LLP

P.O. Box 1247

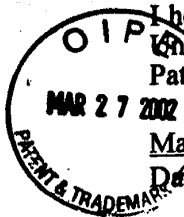
Seattle, Washington 98111-1247

(206) 583-8888

FAX: (206) 583-8500

PATENT

I hereby certify that on the date specified below, this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to the Commissioner for Patents, Washington, DC 20231.



March 18, 2002
Date

Sandy Reisman

Sandy Reisman #4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Edward Balassanian
Application No. : 09/968,704
Filed : October 1, 2001
For : APPLICATION SERVER

Confirmation No.: 2481

COPY OF PAPERS
ORIGINALLY FILED

Art Unit : 2122
Docket No. : 294518002US1
Date : March 15, 2002

Commissioner for Patents
Washington, DC 20231

PETITION FOR EXTENSION OF TIME UNDER 37 CFR. § 1.136(a)

Sir:

Applicant herewith petitions the Commissioner of Patents under 37 CFR § 1.136(a) for a three-month extension of time for filing the response to the Examiner's Action dated October 18, 2001, from December 18, 2001, to March 18, 2001. A check including the amount of the requisite fee is enclosed. Any deficiency or overpayment should be charged or credited to Deposit Account No. 50-0665. This petition is being submitted in triplicate.

Respectfully submitted,
Perkins Coie LLP

Maurice J. Pirio

Maurice J. Pirio

Registration No. 33,273

P.O. Box 1247
Seattle, Washington 98111-1247
(206) 583-8888
Fax: (206) 583-8500

03/28/2002 HROCHA1 00000066 09968704
03 FC:217 460.00 DP



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

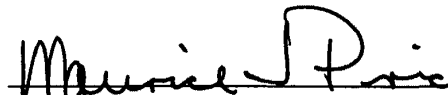
Applicant : Edward Balassanian
Application No. : 09/968,704 Confirmation No.: 2481
Filed : October 1, 2001
For : APPLICATION SERVER
Art Unit : 2122
Docket No. : 294518002US1
Date : March 15, 2002

Commissioner for Patents
Washington, DC 20231

AUTHORIZATION FOR EXTENSIONS OF TIME UNDER 37 C.F.R. § 1.136(A)(3)

Sir:

With respect to the above-identified application, the Commissioner is authorized to treat any concurrent or future reply requiring a petition for an extension of time under 37 C.F.R. § 1.136(a)(3) for its timely submission as incorporating a petition therefor for the appropriate length of time. The Commissioner is also authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 50-0665.


Maurice J. Pirio
Registration No. 33,273

PERKINS COIE LLP
P.O. Box 1247
Seattle, Washington 98111-1247
(206) 583-8888
FAX: (206) 583-8500

03/28/2002 00000066 09568704
03 FC:217 460.00 00

L Number	Hits	Search Text	DB	Time stamp
1	177	717/118	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
2	173	717/148	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
3	320	717/140	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
4	216	717/139	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
5	253	717/136	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
6	298	717/151	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
7	97	717/152	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
8	135	717/165	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:37
9	1	717/118 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:39
10	0	717/148 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:39
11	0	717/140 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:39
12	0	717/139 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:39
13	1	717/136 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:40
14	0	717/151 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:40
15	0	717/152 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:40
16	0	717/165 and program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:40
17	3	program adj transform and applet and client and compil\$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:40

18	1042	applet and client and compil\$5 and forms	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:43
19	0	(applet and client and compil\$5 and forms) and transmit45 and loacl adj cache	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:43
20	0	(applet and client and compil\$5 and forms) and transmit45 and local adj cache	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:43
21	0	(applet and client and compil\$5 and forms) and transmit45 and cache	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 10:43
22	1	(applet and client and compil\$5 and forms) and verifiers and optimizers	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 11:12
23	61	(applet and client and compil\$5 and forms) and verifiers	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 11:12
24	56	((applet and client and compil\$5 and forms) and verifiers) and compilers	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 11:12
25	0	(((applet and client and compil\$5 and forms) and verifiers) and compilers) and source adj module	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 11:12
26	27	(((applet and client and compil\$5 and forms) and verifiers) and compilers) and module	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/08/24 11:12



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/968,704	10/01/2001	Edward Balassanian	294518002US1	2481
25096	7590	08/31/2004	EXAMINER	
PERKINS COIE LLP			KHATRI, ANIL	
PATENT-SEA				
P.O. BOX 1247			ART UNIT	
SEATTLE, WA 98111-1247			PAPER NUMBER	
			2124	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/968,704	BALASSANIAN, EDWARD	
	Examiner	Art Unit	
	Anil Khatri	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 01 October 2001.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-13 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-13 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/25/04.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "*Application Server Facilitating with Client's Computer for Applets along with Various Forms*".

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 55-106 of U.S. Patent No. USPN 6,324,685.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter and limitations are parallel to cited patent and claimed same subject matter.

Claim Rejections - 35 USC 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-8, it is unclear that where the local resource is located. The claims do not clearly state whether the resource resides on the client or the server computer.

Regarding 2, 4-8, it is unclear that where the local cache is located. The claims do not clearly state whether the cache resides on the client or the server computer.

Claim Rejections - 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. U.S.

Patent No. 5,805,829 is taken with Cowan et al. U.S. Patent No. 5,828,840,

Regarding claims 1, 5 and 9

Cohen teaches:

receiving on said server computer a request from a client computer for an applet (col. 2, line 15-16, "The applet loader.. prompts the user for the name of the applet that he would like to execute" and ll. 23-24, "The applet loader then requests that the applet's server computer transfers the first class file comprising the applet.");

compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form (col. 2, lines 25-28, "...class files are analogous to object files produced by compilers such as a C compiler."; and

transmitting said applet in said selected form to said client computer (Fig. 2A, 205 and associated discussion at col. 22-24, "... requests that the applet's server computer transfers the first class file comprising the applet's and lines 31-33, "...the file transfer is accomplished by using a non-IP file transfer...").

Cohen does not specifically teaches that the compilation of the applet is performed *in response to receiving the request*. However, Cowan et al teaches an application dispatcher that initiates a client application in the server to service the client terminal application requirements (col. 3, lines 27-29) for the purpose of improving the management a network of heterogeneous client terminals communicating with a server. Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Cowan in Cohen because the use of Cowan would improve the managing of client-to-server requests.

Cohen does not specifically disclose the applets to be *in a form selected from a plurality forms*. However, Cowan teaches when a client initiates a connection with a server, the server responds to the request for connection by transmitting a message back to the client to determine whether the client is a network terminal or not. Hence, this response to requests is analogous to the instant invention servicing a plurality of forms. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Cowan in Cohen because the use of Cowan would help Cohen improve the management of client-server requests.

Regarding claims 2 and 6

Rejection of claims 1 and 5 applies since claims 2 and 6 recite the similar limitations as of claims 1 and 5. Further, Cohen nor Cowan explicitly discloses *copying said applet in said selected form to a local cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said selected form*. However, it was commonly known in the art that Web browser, e.g., Netscape Communicator, provides temporary cache and folders for storing files that have been recently downloaded (i.e., retrieved from a remote server over the Internet) for fast loading, i.e., instead of making another request to the remote server via the Internet to retrieve the same file, the browser retrieves the same file from the cache for the purpose of saving time. Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use this common known feature in Cohen because the use of this feature would increase the overall system performance and efficiency of Cohen.

Regarding claims 3 and 11

Rejections of claims 1, 5 and 9 applies the claims recite the same limitation as of claims 1, 5 and 9. Further, Cohen does not disclose *transmitting a request to an external resource for*

supplying said applet in said selected form if said applet cannot be compiled from said local resource and directing said external resource to transmit said applet in said selected form to said server computer. However, Cowan teaches a Host Threads (H) service client request for upstream and database connectivity (col. 10, lines. 19-21). Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Cowan in Cohen because the use of Cowan would allow client requests to be serviced by other servers to increase overall system efficiency.

Regarding claims 4, 7 and 8

Claims 4, 7 and 8 recites the same limitations of claim 3, therefore the same rejection is applied.

Regarding claim 10

Claims 10 recites the same limitations of claim 1, therefore the same rejection is applied. Further, Cohen discloses *transforming said intermediate form program module into a transformed intermediate form program module with at least one transformer program* (Fig. 2A, 206, his virtual machine).

Regarding claims 12-13,

Rejection of claim 10 is incorporated. Further claims 11-12 recite the commonly known features of a compiler. Hence, it would have been obvious to person of ordinary skill in the art at the time the invention was made to use this common knowledge in Cohen because the intermediate form would allow verifying, optimizing, compressing, debugging, encrypting computer programs to be performed to increase the overall system performance and efficiency.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- USPN 6230184
- USPN 6594820
- USPN 6742165
- USPN 6745386
- USPN 6336213

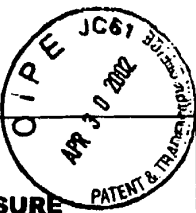
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anil Khatri whose telephone number is 703-305-0282. The examiner can normally be reached on M-F 8:30-5:00 PM.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ANIL KHATRI
PRIMARY EXAMINER
ANIL KHATRI
PRIMARY EXAMINER

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(use as many sheets as necessary)

COMPLETE IF KNOWN

Application Number	09/968,704
Confirmation Number	2481
Filing Date	October 1, 2001
First Named Inventor	Edward Balassanian
Group Art Unit	2122 2124
Examiner Name	Unknown Khatri
Attorney Docket No.	294518002US1

Sheet 1 of 2

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		NUMBER	Kind Code (if known)			
<i>M</i>	AA	5,805,829		Cohen et al.	9/8/98	
<i>a</i>	AB	5,828,840		Cowan et al.	10/27/98	
<i>a</i>	AC	5,848,274		Hambry et al.	12/8/98	
<i>a</i>	AD	5,872,915		Dykes et al.	2/16/99	
<i>n</i>	AE	5,884,078		Faustini	3/16/99	
	AF					
	AG					
	AH					
	AI					
	AJ					

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
	AK							
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

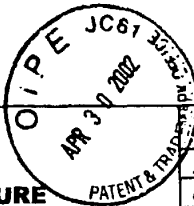
EXAMINER INITIALS	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published.	T
<i>n</i>	AP	"Eliminating Unnecessary Synchronization," http://kimera.cs.washington.edu/synch/index.html [Accessed 10/4/00]	
<i>n</i>	AQ	Sirer, Emin Gün, "Kimera Paper Trail," http://kimera.cs.washington.edu/papers/index.html [Accessed 10/4/00]	
<i>n</i>	AR	Sirer, Emin Gün, "Java, Extensibility and Security Related Links," http://kimera.cs.washington.edu/related/index.html [Accessed 10/4/00]	

EXAMINER <i>[Signature]</i>	DATE CONSIDERED 8/23/04
--------------------------------	----------------------------

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).

\\sa_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(use as many sheets as necessary)

COMPLETE IF KNOWN

Application Number	09/968,704
Confirmation Number	2481
Filing Date	October 1, 2001
First Named Inventor	Edward Balassanian
Group Art Unit	2122 2124
Examiner Name	Unknown Khatri
Attorney Docket No.	294518002US1

Sheet 2 of 2

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

AS	Sirer, Emin Gün, "Java-Relevant Articles in the Press," http://kimera.cs.washington.edu/press/index.html [Accessed 10/4/00]
AT	"Project Members" http://kimera.cs.washington.edu/members.html [Accessed 10/4/00]
AU	Emin Gün Sirer, et al., "Distributed Virtual Machines: A System Architecture for Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://kimera.cs.washington.edu February 26, 1998
AV	Emin Gün Sirer, et al., "Design and Implementation of a Distributed Virtual Machine for Networked Computers," University of Washington, Department of Computer Science and Engineering, Seattle, Washington, 17 th ACM Symposium on Operating system Principles, December 1999
AW	Sirer, Emin Gün, "A System Architecture for Next Generation Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://www.dynacorp-is.com/darpa/meetings/gradmeet98/Whitepapers/darpa-wp.html June 26, 1998
AX	Sirer, Emin Gün, http://www.cs.washington.edu/homes/egs/ [Accessed 10/4/00]
AY	Sirer, Emin Gün, "Kimera - A System Architecture for Networked Computers," http://kimera.cs.washington.edu [Accessed 10/4/00]
AZ	Emin Gün Sirer and Brian Bershad, "Kimera Architecture," http://kimera.cs.washington.edu/overview.html [Accessed 10/4/00]
BA	Sirer, Emin Gün, "Security Flaws in Java Implementations," http://kimera.cs.washington.edu/flaws/index.html [Accessed 10/4/00]
BB	Sirer, Emin Gün, "Kimera Bytecode Verification," http://kimera.cs.washington.edu/verifier.html [Accessed 10/4/00]
BC	Sirer, Emin Gün, "Kimera Test Suite," http://kimera.cs.washington.edu/testsuite.html [Accessed 10/4/00]
BD	Sirer, Emin, Gün, "Kimera Disassembler," http://kimera.cs.washington.edu/disassembler.html [Accessed 10/4/00]

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).

\\sea_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc

Notice of References Cited	Application/Control No. 09/968,704	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD	
	Examiner Anil Khatri	Art Unit 2124	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
X	A	US-6,745,386	06-2004	Yellin, Frank N.	717/166
X	B	US-6,742,165	05-2004	Lev et al.	716/1
X	C	US-6,594,820	07-2003	Ungar, David	717/124
X	D	US-6,230,184	05-2001	White et al.	709/201
X	E	US-6,336,213	01-2002	Beadle et al.	717/136
X	F	US-6,324,685	11-2001	Balassanian, Edward	717/118
X	G	US-5,805,829	09-1998	Cohen et al.	709/202
X	H	US-5,828,840	10-1998	Cowan et al.	709/203
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application No.

09/968,704

Examiner

Anil Khatri

Applicant(s)

BALASSANIAN, EDWARD

Art Unit

2124

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date		Claim		Date		Claim		Date	
Final	Original			Final	Original			Final	Original		
	1	✓			51				101		
	2	✓			52				102		
	3	✓			53				103		
	4	✓			54				104		
	5	✓			55				105		
	6	✓			56				106		
	7	✓			57				107		
	8	✓			58				108		
	9	✓			59				109		
	10	✓			60				110		
	11	✓			61				111		
	12	✓			62				112		
	13	✓			63				113		
	14				64				114		
	15				65				115		
	16				66				116		
	17				67				117		
	18				68				118		
	19				69				119		
	20				70				120		
	21				71				121		
	22				72				122		
	23				73				123		
	24				74				124		
	25				75				125		
	26				76				126		
	27				77				127		
	28				78				128		
	29				79				129		
	30				80				130		
	31				81				131		
	32				82				132		
	33				83				133		
	34				84				134		
	35				85				135		
	36				86				136		
	37				87				137		
	38				88				138		
	39				89				139		
	40				90				140		
	41				91				141		
	42				92				142		
	43				93				143		
	44				94				144		
	45				95				145		
	46				96				146		
	47				97				147		
	48				98				148		
	49				99				149		
	50				100				150		



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 2481

SERIAL NUMBER 09/968,704	FILING DATE 10/01/2001 RULE	CLASS 717 <i>web</i>	GROUP ART UNIT <i>2122</i> <i>214</i>	ATTORNEY DOCKET NO. 294518002US1
APPLICANTS Edward Balassanian, Kirkland, WA; ** CONTINUING DATA ***** THIS APPLICATION IS A CON OF 09/040,972 03/18/1998 PAT 6,324,685 <i>yes</i> ** FOREIGN APPLICATIONS ***** <i>none</i> IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY ** ** 10/16/2001				
Foreign Priority claimed ☐ yes ☒ no 35 USC 119 (a-d) conditions ☐ yes ☒ no ☐ Met after met Allowance <i>met</i> Verified and Acknowledged <i>met</i> Examiner's Signature <i>met</i> Initials		STATE OR COUNTRY WA	SHEETS DRAWING 3	TOTAL CLAIMS 13
INDEPENDENT CLAIMS 3				
ADDRESS 25096				
TITLE Application server				
FILING FEE RECEIVED 435	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit	

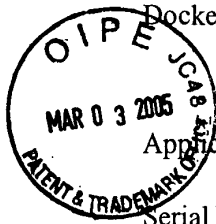
Search Notes 	Application No. 09/968,704 Examiner Anil Khatri	Applicant(s) BALASSANIAN, EDWARD Art Unit 2124
--	--	---

SEARCHED			
Class	Subclass	Date	Examiner
717	118	8/24/2004	AK
	136		
	139		
	140		
	148		
	151		
	152		
	165		

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
EAST	8/24/2004	AK
Todd Swan QAS for Double Patent Rejection	8/24/2004	AK
Chaki, SPE 2124, Claim interpretation, 112 and Double Pat. rejections	8/24/2004	AK

27123
↑CUSTOMER NUMBER↑



Docket No. 3802-4066US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/968,704

Examiner: Khatri, Anil

Filed: October 1, 2001

For: APPLICATION SERVER

AMENDMENT FEE TRANSMITTAL

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Amendment for the above-identified application.

☒ No additional fee is required.

☐ The additional fee has been calculated as shown below:

CLAIMS AS AMENDED

	Claims Remaining After Amendment	Highest No. Covered by Previous Payments	Extra	Rate	Additional Fee
Total Claims*	13	20	0	\$50.00/ \$25.00	\$ 0
Independent Claims	3	3	0	\$200.00/ \$100.00	\$ 0
Multiple Dependent Claims	(If claims added by amendment include Multiple Dependent Claim(s) and there was no Multiple Dependent Claim(s) in application before amendment add \$360.00 to additional fee (\$180.00 for small entity).				\$ 0
TOTAL					\$ 0

*Includes all independent and single dependent claims and all claims referred to in multiple dependent claims. See 37 C.F.R. §1.75(c).

- ☐ Small entity status is or has been claimed.
Reduced Fees Under 37 C.F.R. §1.9(f) paid herewith \$_____
- ☐ _____ Pages Sequence Listing
- ☐ _____ Computer disk(s) containing substitute Sequence Listing
- ☐ Statement under 37 C.F.R. §1.825(b) that the computer and paper copies of the substitute Sequence Listing are the same.
- ☐ A check in the amount of \$_____ to cover the filing fee is attached.
- ☐ Charge fee to Deposit Account No. 13-4500, Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required for filing this amendment, including all fees pursuant to 37 CFR §1.17 for its timely consideration, or credit any overpayment to Deposit Account No. 13-4500, Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: February 28, 2005

By: Daniel C. Sheridan
Daniel C. Sheridan
Registration No. 53,585

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/968,704

Examiner: Khatri Anil

Filed: October 1, 2001

For: APPLICATION SERVER

Amendment and Response

Mail Stop Amendment
COMMISSIONER OF PATENTS
P.O. BOX 1450
Alexandria, VA 22313

Sir:

In response to the Office Action dated August 31, 2004, Applicant respectfully requests reconsideration based on the following amendments and remarks.

Amendments to the Title are included on page 2 of this paper;

A listing of the Claims is included herein beginning on page 3 of this paper;

Remarks begin on page 7 of this paper.

Application No. 09/968,704
Response dated February 28, 2005
Reply to the Office Action dated August 31, 2004

Docket No. 3802-4066US1

IN THE TITLE:

Please amend the **title** of the application, as follows:

Application Server Facilitating with Client's Computer for Applets along with
Various Formats

IN THE CLAIMS:

The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Original) A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of the applet out of a plurality forms of the applet, comprising:

a) receiving on said server computer a request from a client computer for an applet in a form selected from a plurality forms;

b) compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form; and

c) transmitting said applet in said selected form to said client computer.

2. (Original) The method of claim 1, further comprising the step of:

copying said applet in said selected form to a local cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said selected form.

3. (Original) The method of claim 1, further comprising the step of:

transmitting a request to an external resource for supplying said applet in said selected form if said applet can not be compiled from said local resource and

directing said external resource to transmit said applet in said selected form to said server computer.

4. (Original) The method of claim 2, further comprising the step of:

transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resource, and

directing said external resource to transmit said applet in said selected form to said server computer.

5. (Original) A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of said applet out of a plurality of forms of said applet, comprising:

a) receiving on said server computer a request from a client computer for an applet in a specified form selected from a plurality of forms;

b) determining whether said applet is stored in said specified form in a local cache and, if so, transmitting said applet in said specified form to said client computer;

c) if said applet is not stored in said selected form in said local cache, compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form and transmitting said applet in said selected form to said client computer.

6. (Original) The method of claim 5, further comprising the step of:

copying said applet in said selected form to said cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said form.

7. (Original) The method of claim 5, further comprising the step of:

transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be

compiled from said local resources, and directing said external resource to transmit said applet in said selected form to said server computer.

8. (Original) The method of claim 6, further comprising the step of:

transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resource, and

directing said external resource to transmit said applet in said form to said server computer.

9. (Original) A method operating on a computer system for generating an applet in response to a request by a client computer wherein each request for an applet specifies one form of the applet out of a plurality forms of the applet, comprising:

a) receiving on a server computer a request from a client computer for an applet in a form selected from a plurality forms;

b) compiling an applet program module into an intermediate form program module;

c) transmitting said applet in said selected form to said client computer.

10. (Original) The method of claim 9, further comprising the step of:

transforming said intermediate form program module into a transformed intermediate form program module with at least one transformer program.

11. (Original) The method of claim 10, wherein said at least one transformer program is selected from the group consisting of verifying computer programs, optimizing computer programs, compressing computer programs, debugging computer programs, usage

monitoring computer programs and encrypting computer programs.

12. (Original) The method of claim 10, further comprising the step of:

compiling said transformed intermediate form program module into
machine specific binary code with a target compiler.

13. (Original) The method of claim 11, further comprising the step of:

compiling said transformed intermediate form program module into
machine specific binary code with a target compiler.

REMARKS

Claims 1-13 are pending in the application. Claim 9 has been amended herein. Applicant submits that no new matter has been added. Applicant respectfully requests reconsideration of the above-identified application, in view of the above amendments and following remarks.

Specification Objections

The abstract of the disclosure has been objected to for allegedly "being too general and not directed to the entire disclosure." (See, Office Action, page 2, ¶5). Applicant has herein amended the abstract of the disclosure to further clarify aspects of the invention. Accordingly, Applicant submits that the objection to the specification have been overcome.

Double Patenting

The Examiner has issued a non-statutory double patenting rejection alleging that claims 1-13 are allegedly unpatentable over claims 55-106 of US Patent No. 6,324,685. Applicant herein files a Terminal Disclaimer to obviate the obviousness double patenting rejection.

Claim Rejection – 35 U.S.C. § 112

Claims 1-8 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner alleges that it is unclear where the "local resource" and "local cache" are located.

Applicants respectfully, traverse the rejection. More specifically, Applicants submit that one of ordinary skill in the art would understand where the local resources and local cache are situated based the specification. By way of example only, please refer to Fig. 1, which illustrates the local resources as situated on a server side of the client-server system.

Claim Rejection – 35 U.S.C. § 103

Claims 1-13 have been rejected under 35 U.S.C. § 103, as allegedly being unpatentable over Cohen, et al. US Patent No. 5,805,829, in view of Cowan, et al. US Patent No. 5,828,840. Applicant respectfully disagrees and submits that the pending claims are patentably distinct from the cited references, taken alone or in combination.

Independent claim 1 recites, *inter alia*:

A method...for managing requests to a server computer for applets...comprising:

- a) receiving on said server computer a request from a client computer for an applet in a form selected from a plurality forms;
- b) compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form; and
- c) transmitting said applet in said selected form to said client computer.

Applicant respectfully submits that neither Cohen, nor Cowan teach, disclose or suggest the elements of the claimed invention.

The Examiner asserts that “Cohen teaches: receiving on said server computer a request from a client computer for an applet (col. 2, line 15-16, ‘The applet loader...prompts the user for the name of the applet that he would like to execute’ and 11.23-24, ‘The applet loader then requests that the applet’s server computer transfers the first class file comprising the applet.’;” (See, Office Action, page 4, ¶1). However, in the cited passage, Cohen’s applet loader

prompts the user for the name of an applet, wherein the name correlates to a URL identifying a server. The applet load then transmits the request for the specified applet to a server. (See, Cohen, Col. 2, lines 15-24). Cohen does not teach, disclose or suggest receiving on the server a request...in a form selected from a plurality of forms. The applet loader blindly accepts a name containing the URL and transmits it to the server. As such, Cohen is silent regarding formatting the request, in a "form selected from a plurality of forms" as recited in independent claim 1.

Furthermore, the Examiner asserts "Cohen teaches...compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form (col. 2, lines 25-28, "class files are analogous to object files produced by compilers such as a C compiler." (See, Office Action, page 4, ¶2). Again, Applicant submit that Cohen does not disclose a server receiving a request in a form selected from a plurality of forms. Similarly, Cohen does not disclose the ability to compile an applet according to a form selected from a plurality of forms. Cohen's server simply transmits "intermediate code" to the server.

Similarly, Applicant submits that Cohen does not disclose "transmitting said applet in said selected form to said client computer either. The Examiner asserts that aspect of the claimed invention is disclosed in Fig. 2A 205 and associated discussion at col. 22-24, "...requests that the applet's server computer transfers the first class file comprising the applet's and lines 31-33 "...the file transfer is accomplished by using a non-IP file transfer..." (See, Office Action, page 4, ¶3). However, Applicant submits that the server disclosed in Cohen does not transmit applets according to a selected format chosen from a plurality of formats.

Moreover, Applicants submit that the Cowan reference does not remedy the deficiencies identified in Cohen regarding independent claim 1. Cowan simply discloses that the

server may determine whether a client can execute Java applications directly (a network terminal) or not (non-network terminals). Based on the determination, the server executes the application for non-network terminals, were as for network terminals it appears as though the client executes the code. Cowan does not receive a request...in a form selected from a plurality of forms, as recited in independent claim 1.

Accordingly, Applicant submits that independent claims 1, 5 and 9 are patentably distinct from the cited references for at least these reasons. Similarly, Applicant submits that claims 2-4, 6-8, and 10-13 which are directly or indirectly dependent from independent claims 1, 5 and 9 respectively are patentably distinct from the cited references taken either alone or in combination for at least similar reasons. Therefore, Applicant requests withdrawal of these grounds of rejections.

CONCLUSION

It is now believed that all pending claims are in condition for allowance. In view of these remarks, an early and favorable reconsideration is respectfully requested.

AUTHORIZATION

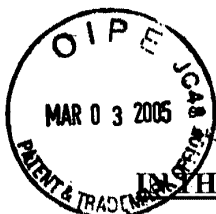
Applicant believes that no additional fees are necessary for the submission of this Amendment and Response, however, should any fees be due, the Commissioner is hereby authorized to charge any such fees which may be required for this Amendment and Response, or credit any overpayment, to Deposit Account No. 13-4500, Order No. 3802-4066US1. A DUPLICATE COPY OF THIS SHEET IS ENCLOSED.

Dated: February 28, 2005

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

By: Daniel C. Sheridan
Daniel C. Sheridan
Registration No. 53,585

Correspondence Address:
MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 (telephone)
(212) 415-8701 (facsimile)



Docket No. 3802-4066US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/968,704

Examiner: Khatri, Anil

Filed: October 1, 2001

For: APPLICATION SERVER

PETITION AND FEE FOR EXTENSION OF TIME (37 C.F.R. § 1.136(a))

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. This is a petition for an extension of time for Response to the Office Action dated August 31, 2004
2. The communication in connection with the matter for which this extension is requested
☒ is filed herewith.
☐ has been filed on ____.
3. ☐ Applicant(s) is/are entitled to Small Entity Status.
☐ Statement has already been filed

- | 4. | Total Months
Requested | Fee for Other
than Small Entity | Fee for
Small Entity |
|--|--|------------------------------------|-------------------------|
| a. ☐ | one month | \$120.00 | \$60.00 |
| b. ☐ | two months | \$450.00 | \$225.00 |
| c. ☒ | three months | \$1,020.00 | \$510.00 |
| d. ☐ | four months | \$1,590.00 | \$795.00 |
| e. ☐ | five months | \$2,160.00 | \$1,080.00 |
| f. ☐ | An extension for ____ months has already been secured for filing the above-identified communication and the fee paid therefor of \$____ is deducted from the total fee due for the total months of extension now requested. The fee for this extension (\$____), minus the fee previously paid (\$____) equals \$____ (total fee due). | | |

902622 v1

03/07/2005 JBALINAH 00000079 09928704

01 FC:2253

510.00-0P

03/09/2005 JBALINAH 00000001 09968704

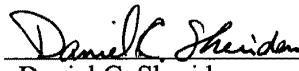
01 FC:2253 510.00 0P

5. ☒ A check in the amount of \$510.00 to cover the extension fee is attached.
6. ☐ Charge fee to Deposit Account No. 13-4500, Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
7. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required by this paper, or credit any overpayment to Deposit Account No. 13-4500. Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

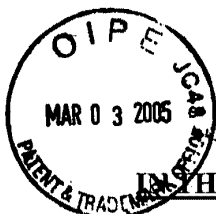
Dated: February 28, 2005

By:


Daniel C. Sheridan
Registration No. 53,585

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile



Docket No. 3802-4066US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/968,704

Examiner: Khatri, Anil

Filed: October 1, 2001

For: APPLICATION SERVER

PETITION AND FEE FOR EXTENSION OF TIME (37 C.F.R. § 1.136(a))

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. This is a petition for an extension of time for Response to the Office Action dated August 31, 2004
2. The communication in connection with the matter for which this extension is requested
☒ is filed herewith.
☐ has been filed on ____.
3. ☐ Applicant(s) is/are entitled to Small Entity Status.
☐ Statement has already been filed

- | 4. | Total Months
Requested | Fee for Other
than Small Entity | Fee for
Small Entity |
|--|--|------------------------------------|-------------------------|
| a. ☐ | one month | \$120.00 | \$60.00 |
| b. ☐ | two months | \$450.00 | \$225.00 |
| c. ☒ | three months | \$1,020.00 | \$510.00 |
| d. ☐ | four months | \$1,590.00 | \$795.00 |
| e. ☐ | five months | \$2,160.00 | \$1,080.00 |
| f. ☐ | An extension for ____ months has already been secured for filing the above-identified communication and the fee paid therefor of \$____ is deducted from the total fee due for the total months of extension now requested. The fee for this extension (\$____), minus the fee previously paid (\$____) equals \$____ (total fee due). | | |

902622 v1

03/07/2005 JBALINAH 00000079 09928704

01 FC:2253

510.00-0P

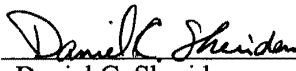
03/09/2005 JBALINAH 00000001 09968704

01 FC:2253 510.00 0P

5. ☒ A check in the amount of \$510.00 to cover the extension fee is attached.
6. ☐ Charge fee to Deposit Account No. 13-4500, Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
7. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required by this paper, or credit any overpayment to Deposit Account No. 13-4500. Order No. _____. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

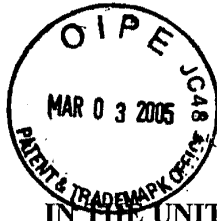
Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: February 28, 2005

By: 
Daniel C. Sheridan
Registration No. 53,585

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile



Docket No. 3802-4066US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/968,704

Examiner: Khatri, Anil

Filed: October 1, 2001

For: APPLICATION SERVER

**TERMINAL DISCLAIMER UNDER 37 C.F.R. §1.321(C)
TO OBVIATE PROVISIONAL DOUBLE PATENTING REJECTION**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Identity of Assignee

The petitioner, Edward Balassanian on behalf of Implicit Networks, having a business address at Implicit Networks 600 108th Ave NE Suite 1035, Bellevue, WA 98004, is the owner of the entire right, title and interest in the above-identified application, Serial No. 09/968,704. The petitioner is also the owner of the entire, right, title and interest in U.S. Patent No. 6,324,685.

Identification of Person(s) Making This Disclaimer

Name of disclaimant: Daniel C. Sheridan Disclaimant represents that he/she is a Registered Patent Agent, Registration No. 53,585, and an authorized representative for the above-identified application, and authorized to sign on behalf of the assignee identified above.

Extent of Interest

The extent of assignee's interest is in the whole of this invention.

03/07/2005 JBALINAN 00000079-09920704

02 FC:2014

65.00 OP

902792 v1

03/09/2005 JBALINAN 00000001 09568704
02 FC:2014 65.00 OP

Declaration Under 37 C.F.R. 3.73(b)

I, the undersigned, have reviewed all the documents in the chain of title of the patent application identified above and, to the best of my knowledge and belief, title is in the assignee identified above.

Disclaimer

The petitioner, through its authorized representative, hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. 154 to 156 and 173, of United States Patent No. 6,324,685. Petitioner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and United States Patent No. 6,324,685 are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, petitioner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 to 156 and 173 of U.S. Patent 6,324,685, in the event that U.S. Patent 6,324,685 expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. 1.321, has all claims cancelled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

Fee Status

(37 C.F.R. 1.20(d) and 37 C.F.R. 1.321)

☐ large entity--fee \$130.00

☒ small entity--fee \$65.00

Fee Payment

☒ Attached is a check in the sum of \$65.00.

☐ Charge Deposit Account 13-4500, Order No. _____ any fee required by this paper.

AUTHORIZATIONS:

The Commissioner is hereby authorized to charge any additional fees which may be required for timely consideration of this Terminal Disclaimer under 37 C.F.R. §§1.16 -§1.20 or credit any overpayment to Deposit Account No. 13-4500, Order No. 3802-4066US1. A

DUPLICATE COPY OF THIS DISCLAIMER IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: February 28, 2005

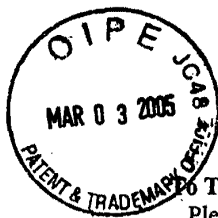
By:



Daniel C. Sheridan
Registration No. 53,585

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile



BEST AVAILABLE COPY

Atty. Docket No. 3802-4066US1

RECORDATION FORM COVER SHEET
PATENTS ONLY

To The Honorable Commissioner of Patents and Trademarks:
Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): Becomm Corporation Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No	2. Name and address of receiving party(ies): Name: Implicit Networks, Inc. Address: 600 108 th Ave. NE Suite 1035 Bellevue, WA 98004 Additional name(s) & addresses attached? ☐ Yes ☒ No
3. Nature of conveyance: ☐ Assignment ☒ Other Amendment Execution Date(s): August 7, 2003	4. Patent Application number(s) 09/968,704 filed October 1, 2001 Execution Date(s):
5. Name and address of party to whom correspondence concerning document should be mailed: Name: Walter G. Hanchuk Address: Morgan & Finnegan 3 World Financial Center New York, NY 10281	6. Total number of applications involved: 1 7. Total fee (37 CFR 3.41): \$40.00 ☐ A check in the amount of 40.00 is enclosed. ☒ Charge to Deposit Account No.13-4500, Order No. 3802-4066US1. ☒ Charge any deficiencies to Deposit Account 13-4500, Order No. 3802-4066US1 (A duplicate copy of this sheet is enclosed)

DO NOT USE THIS SPACE

8. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of original document.		
Name of Person Signing Walter G. Hanchuk	Signature 	Date: 9/3/04
Reg. No. 35,179 Total no. of pages including cover sheet, attachments and document: 2		

DO NOT DETACH THIS PORTION

Mail documents to be recorded with required cover sheet information to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document to be recorded, including time for reviewing the document and gathering the data needed, and completing and reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Office of Information Systems, PK2-1000C, Washington, DC 20231, and to the Office of Management and Budget, Paperwork Reduction Project (0651-0011), Washington, DC 20503.

864310 v1

BEST AVAILABLE COPY

STATE OF WASHINGTON



SECRETARY OF STATE

IMPLICIT NETWORKS, INC.

c/o C T CORPORATION SYSTEM
520 PIKE ST
SEATTLE WA 98101

AMENDMENT

I, Sam Reed, Secretary of State of the State of Washington and custodian of its seal, hereby certify that documents meeting Washington statutory requirements have been filed and processed with the Secretary of State on behalf of:

IMPLICIT NETWORKS, INC.

A Washington Profit Corporation
UBI: 601 687 669
Filing Date: August 07, 2003

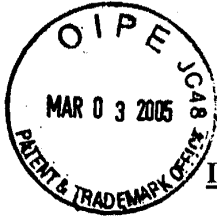
Previous Name:

BECOMM CORPORATION



Given under my hand and the seal of the State of Washington at Olympia, the State Capital.

Sam Reed, Secretary of State



2124
Docket No. 3802-4066US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Edward Balassanian

Group Art Unit: 2124

Serial No.: 09/928,704

Examiner: Khatri, Anil

Filed: October 1, 2001

For: APPLICATION SERVER

CERTIFICATE OF MAILING (37 C.F.R. §1.8(A))

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I hereby certify that the attached:

1. Amendment and Response
2. Amendment Fee Transmittal (no fee due)
3. A Petition for a Three-Month Extension of Time
4. A check in the amount of \$510.00
5. A Terminal Disclaimer (w/copies of Assignment documents for the above-referenced application)
6. A check in the amount of \$65.00

along with any paper(s) referred to as being attached or enclosed and this Certificate of Mailing are being deposited with the United States Postal Service on date shown below with sufficient postage as first-class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: February 28, 2005

By:

Daniel C. Sheridan

Daniel C. Sheridan

Registration No. 53,585

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 Telephone
(212) 415-8701 Facsimile

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD						Application or Docket Number 9/19/05 704			
Substitute for Form PTO-875									
CLAIMS AS FILED – PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA		RATE	FEE				
BASIC FEE (37 CFR 1.16(a))					\$ _____	OR	\$ _____		
TOTAL CLAIMS (37 CFR 1.16(c))	minus 20 =			X \$ _____ =		OR	X \$ _____ =		
INDEPENDENT CLAIMS (37 CFR 1.16(b))	minus 3 =			+ \$ _____ =		OR	+ \$ _____ =		
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(d))						OR			
				TOTAL		OR	TOTAL		
* If the difference in column 1 is less than zero, enter "0" in column 2.									
CLAIMS AS AMENDED – PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT A	3/3/05	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE	
	Total (37 CFR 1.16(c))	13	20	=	X \$ _____ =		X \$ _____ =		
	Independent (37 CFR 1.16(b))	3	3	=	X \$ _____ =		X \$ _____ =		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))									
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE	
	Total (37 CFR 1.16(c))			=	X \$ _____ =		X \$ _____ =		
	Independent (37 CFR 1.16(b))			=	X \$ _____ =		X \$ _____ =		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))									
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE	
	Total (37 CFR 1.16(c))			=	X \$ _____ =		X \$ _____ =		
	Independent (37 CFR 1.16(b))			=	X \$ _____ =		X \$ _____ =		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))									
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

9/9/08, 404

APPLICATION NUMBER

7	Rejected	-	(Through Numerals) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	+	Restricted	I	Interference	O	Objected

Claim		Date		Claim		Date		Claim		Date	
Final	Original			Final	Original			Final	Original		
1	2			51				101			
2				52				102			
3				53				103			
4				54				104			
5				55				105			
6				56				106			
7				57				107			
8				58				108			
9				59				109			
10				60				110			
11				61				111			
12				62				112			
13				63				113			
14				64				114			
15				65				115			
16				66				116			
17				67				117			
18				68				118			
19				69				119			
20				70				120			
21				71				121			
22				72				122			
23				73				123			
24				74				124			
25				75				125			
26				76				126			
27				77				127			
28				78				128			
29				79				129			
30				80				130			
31				81				131			
32				82				132			
33				83				133			
34				84				134			
35				85				135			
36				86				136			
37				87				137			
38				88				138			
39				89				139			
40				90				140			
41				91				141			
42				92				142			
43				93				143			
44				94				144			
45				95				145			
46				96				146			
47				97				147			
48				98				148			
49				99				149			
50				100				150			

If more than 150 claims or 10 actions
staple additional sheet here



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

25096 7590 06/07/2005
PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER

KHATRI, ANIL

ART UNIT PAPER NUMBER

2193

DATE MAILED: 06/07/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/968,704	10/01/2001	Edward Balassanian	294518002US1	2481

TITLE OF INVENTION: APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	09/07/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(703) 746-4000**

or **Fax**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25096 7590 06/07/2005

**PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/968,704	10/01/2001	Edward Balassanian	294518002US1	2481

TITLE OF INVENTION: APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	09/07/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
KHATRI, ANIL	2193	717-148000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

☐ A check in the amount of the fee(s) is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/968,704	10/01/2001	Edward Balassanian	294518002US1	2481
25096	7590	06/07/2005	EXAMINER	
PERKINS COIE LLP			KHATRI, ANIL	
PATENT-SEA				
P.O. BOX 1247			ART UNIT	
SEATTLE, WA 98111-1247			PAPER NUMBER	
			2193	

DATE MAILED: 06/07/2005

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 478 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 478 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

09/968,704

Examiner

Anil Khatri

Applicant(s)

BALASSANIAN, EDWARD

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/3/05.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ The drawings filed on 01 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 5/11/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Allowable Subject Matter

Claims 1-13 are allowed.

The following is an examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fails to fairly suggest the claimed invention of an applet server architecture which allows client computers to request and execute applets in a safe manner without requiring the client to have local resources to verify or compile the applet code. Specifically, claims 1, 5 and 9 are directed to managing request to server computer for applets in client server environment, compiling them and transmitting them to client's system in selected forms and byte-code verification are server based and thereby provide more efficient use of resources and a flexible mechanism for instituting enterprise-wide security policies. Further, the server architecture also provides a cache for applets, allowing clients to receive applet code without having to access nodes outside the local network.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anil Khatri, Primary Examiner whose telephone number is 571-272-3725. The examiner can normally be reached on M-F 8:30-5:00 PM.

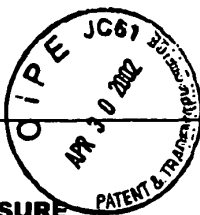
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANIL KHATRI
PRIMARY EXAMINER

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN	
				Application Number	09/968,704
				Confirmation Number	2481
				Filing Date	October 1, 2001
				First Named Inventor	Edward Balassanian
				Group Art Unit	2122
Examiner Name	Unknown Khatri				
Sheet	1	of	2	Attorney Docket No.	294518002US1

U.S. PATENT DOCUMENTS						
EXAMINER INITIALS	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		NUMBER	Kind Code (if known)			
✓	AA	5,805,829		Cohen et al.	9/8/98	
✓	AB	5,828,840		Cowan et al.	10/27/98	
✓	AC	5,848,274		Hambry et al.	12/8/98	
M	AD	5,872,915		Dykes et al.	2/16/99	
✓	AE	5,884,078		Faustini	3/16/99	
	AF					
	AG					
	AH					
	AI					
	AJ					

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

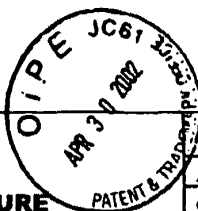
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIALS	Cite No.	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number Kind Code (if known)				
	AK						
	AL						
	AM						
	AN						
	AO						

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS			
EXAMINER INITIALS	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published.	T
	AP	"Eliminating Unnecessary Synchronization," http://kimera.cs.washington.edu/synch/index.html [Accessed 10/4/00]	
	AQ	Sirer, Emin Gün, "Kimera Paper Trail," http://kimera.cs.washington.edu/papers/index.html [Accessed 10/4/00]	
	AR	Sirer, Emin Gün, "Java, Extensibility and Security Related Links," http://kimera.cs.washington.edu/related/index.html [Accessed 10/4/00]	

EXAMINER 	DATE CONSIDERED 5/11/05
* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).	

\\sea_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc

Please type a plus sign (+) inside this box → ☐



PTO/SB/08A
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN	
				Application Number	09/968,704
				Confirmation Number	2481
				Filing Date	October 1, 2001
				First Named Inventor	Edward Balassanian
				Group Art Unit	2122
				Examiner Name	Unknown Khatri
Sheet	2	of	2	Attorney Docket No.	294518002US1

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS		
✓	AS	Sirer, Emin Gün, "Java-Relevant Articles in the Press," http://kimera.cs.washington.edu/press/index.html [Accessed 10/4/00]
✓	AT	"Project Members" http://kimera.cs.washington.edu/members.html [Accessed 10/4/00]
✓	AU	Emin Gün Sirer, et al., "Distributed Virtual Machines: A System Architecture for Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://kimera.cs.washington.edu February 26, 1998
✓	AV	Emin Gün Sirer, et al., "Design and Implementation of a Distributed Virtual Machine for Networked Computers," University of Washington, Department of Computer Science and Engineering, Seattle, Washington, 17 th ACM Symposium on Operating system Principles, December 1999
✓	AW	Sirer, Emin Gün, "A System Architecture for Next Generation Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington http://www.dynacorp-is.com/darpa/meetings/gradmeet98/Whitepapers/darpa-wp.html June 26, 1998
✓	AX	Sirer, Emin Gün, http://www.cs.washington.edu/homes/egs/ [Accessed 10/4/00]
✓	AY	Sirer, Emin Gün, "Kimera - A System Architecture for Networked Computers," http://kimera.cs.washington.edu [Accessed 10/4/00]
✓	AZ	Emin Gün Sirer and Brian Bershad, "Kimera Architecture," http://kimera.cs.washington.edu/overview.html [Accessed 10/4/00]
✓	BA	Sirer, Emin Gün, "Security Flaws in Java Implementations," http://kimera.cs.washington.edu/flaws/index.html [Accessed 10/4/00]
✓	BB	Sirer, Emin Gün, "Kimera Bytecode Verification," http://kimera.cs.washington.edu/verifier.html [Accessed 10/4/00]
✓	BC	Sirer, Emin Gün, "Kimera Test Suite," http://kimera.cs.washington.edu/testsuite.html [Accessed 10/4/00]
✓	BD	Sirer, Emin Gün, "Kimera Disassembler," http://kimera.cs.washington.edu/disassembler.html [Accessed 10/4/00]

COPY OF PAPERS
ORIGINALLY FILED

RECEIVED
MAY 08 2002
Technology Center 2100

EXAMINER	DATE CONSIDERED
	5/11/05
* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).	

\\scs_apps\patent\Clients\BeComm (29451)\8002 (App Server)\US01\SB08.doc

Notice of References Cited	Application/Control No. 09/968,704	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD	
	Examiner Anil Khatri	Art Unit 2193	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
X	A	US-6,636,900	10-2003	Abdelnur, Alejandro H.	719/316
X	B	US-6,446,081	09-2002	Preston, Keith Robert	707/104.1
X	C	US-5,761,421	06-1998	van Hoff et al.	709/223
X	D	US-5,706,502	01-1998	Foley et al.	707/10
X	E	US-6,282,702	08-2001	Ungar, David	717/148
X	F	US-6,836,889	12-2004	Chan et al.	719/310
X	G	US-6,842,897	01-2005	Beadle et al.	718/1
X	H	US-6,704,926	03-2004	Blandy et al.	717/148
X	I	US-6,321,377	11-2001	Beadle et al.	717/148
X	J	US-6,295,643	09-2001	Brown et al.	717/148
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

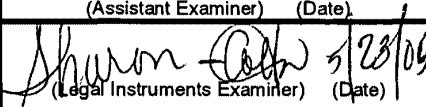
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Yang et al, "Developing integrated web and database applications using JAVA applets and JDBC drivers", ACM SIGSCE, pp 302-306, 1998
	V	Newsome et al, "Proxy compilation of dynamically loaded Java classes with Mojo", ACM LCTES, pp 204-212, June 2002
	W	Begole et al, "Transparent sharing of Java applets: a replicated approach", ACM UIST, pp 55-64, 1997
	X	Benton et al, "Compiling standard ML to ava bytecode", ACM ICFP, pp 129-140

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Issue Classification 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	09/968,704		BALASSANIAN, EDWARD	
	Examiner		Art Unit	
	Anil Khatri		2193	

ISSUE CLASSIFICATION											
ORIGINAL					CROSS REFERENCE(S)						
CLASS		SUBCLASS			CLASS		SUBCLASS (ONE SUBCLASS PER BLOCK)				
717		148			717		140				
INTERNATIONAL CLASSIFICATION					209		203				
G	06	F	9	145							
				/							
				/							
				/							
				/							
(Assistant Examiner) (Date)  (Legal Instruments Examiner) (Date) 5/28/06					 ANIL KHATRI PRIMARY EXAMINER 5/11/05 (Primary Examiner) (Date)					Total Claims Allowed: 13	
										O.G. Print Claim(s) 1	

☐ Claims renumbered in the same order as presented by applicant										☐ CPA		☐ T.D.		☐ R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		31		61		91		121		151		181		
2	2		32		62		92		122		152		182		
4	3		33		63		93		123		153		183		
3	4		34		64		94		124		154		184		
5	5		35		65		95		125		155		185		
6	6		36		66		96		126		156		186		
8	7		37		67		97		127		157		187		
7	8		38		68		98		128		158		188		
9	9		39		69		99		129		159		189		
10	10		40		70		100		130		160		190		
11	11		41		71		101		131		161		191		
13	12		42		72		102		132		162		192		
12	13		43		73		103		133		163		193		
	14		44		74		104		134		164		194		
	15		45		75		105		135		165		195		
	16		46		76		106		136		166		196		
	17		47		77		107		137		167		197		
	18		48		78		108		138		168		198		
	19		49		79		109		139		169		199		
	20		50		80		110		140		170		200		
	21		51		81		111		141		171		201		
	22		52		82		112		142		172		202		
	23		53		83		113		143		173		203		
	24		54		84		114		144		174		204		
	25		55		85		115		145		175		205		
	26		56		86		116		146		176		206		
	27		57		87		117		147		177		207		
	28		58		88		118		148		178		208		
	29		59		89		119		149		179		209		
	30		60		90		120		150		180		210		

Search Notes

Application/Control No.

09/968,704

Examiner

Anil Khatri

Applicant(s)/Patent under
Reexamination

BALASSANIAN, EDWARD

Art Unit

2193

SEARCHED

Class	Subclass	Date	Examiner
717	116,118	5/11/2005	
	140-142	5/11/2005	
	148	5/11/2005	
	162, 165	5/11/2005	
	166	5/11/2005	AK
709	203	5/11/2005	AK
	223	5/11/2005	ak

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner
717	140	5/11/2005	AK
709	203	5/11/2005	AK

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
East	5/11/2005	AK
ACM/IEEE	5/11/2005	AK

Index of Claims



Application/Control No.

09/968,704

Examiner

Anil Khatri

Applicant(s)/Patent under Reexamination

BALASSANIAN, EDWARD

Art Unit

2193

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date			
Final	Original				
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
	38				
	39				
	40				
	41				
	42				
	43				
	44				
	45				
	46				
	47				
	48				
	49				
	50				

Claim		Date			
Final	Original				
	51				
	52				
	53				
	54				
	55				
	56				
	57				
	58				
	59				
	60				
	61				
	62				
	63				
	64				
	65				
	66				
	67				
	68				
	69				
	70				
	71				
	72				
	73				
	74				
	75				
	76				
	77				
	78				
	79				
	80				
	81				
	82				
	83				
	84				
	85				
	86				
	87				
	88				
	89				
	90				
	91				
	92				
	93				
	94				
	95				
	96				
	97				
	98				
	99				
	100				

Claim		Date			
Final	Original				
	101				
	102				
	103				
	104				
	105				
	106				
	107				
	108				
	109				
	110				
	111				
	112				
	113				
	114				
	115				
	116				
	117				
	118				
	119				
	120				
	121				
	122				
	123				
	124				
	125				
	126				
	127				
	128				
	129				
	130				
	131				
	132				
	133				
	134				
	135				
	136				
	137				
	138				
	139				
	140				
	141				
	142				
	143				
	144				
	145				
	146				
	147				
	148				
	149				
	150				



UNITED STATES PATENT AND TRADEMARK OFFICE

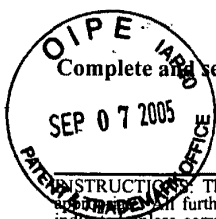
UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIBDATASHEET

CONFIRMATION NO. 2481

Bib Data Sheet

SERIAL NUMBER 09/968,704	FILING OR 371(c) DATE 10/01/2001 RULE	CLASS 717	GROUP ART UNIT 2193	ATTORNEY DOCKET NO. 294518002US1
APPLICANTS Edward Balassanian, Kirkland, WA; ** CONTINUING DATA ***** This application is a CON of 09/040,972 03/18/1998 PAT 6,324,685 ** FOREIGN APPLICATIONS ***** IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY ** ** 10/16/2001				
Foreign Priority claimed ☐ yes ☐ no 35 USC 119 (a-d) conditions ☐ yes ☐ no ☐ Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		STATE OR COUNTRY WA	SHEETS DRAWING 3	TOTAL CLAIMS 13
INDEPENDENT CLAIMS 3				
ADDRESS 25096				
TITLE APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLETS ALONG WITH VARIOUS FORMATS				
FILING FEE RECEIVED 435	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit	



PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail****Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(703) 746-4000**or **Fax**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where indicated. For further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25096 7590 06/07/2005

**PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247**

09/09/2005 MBEYENE2 00000012 134500 09968704

01 FC:2501 700.00 DA
02 FC:1504 300.00 DA
03 FC:8001 3.00 DA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/968,704	10/01/2001	Edward R. Belasarian	294518002US1	2481

TITLE OF INVENTION: APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLETS ALONG WITH VARIOUS FORMATS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	09/07/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
KHATRI, ANIL	2193	717-148000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number** is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Morgan & Finnegan, LLP

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

IMPLICIT NETWORKS, INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

BELLEVUE, WASHINGTON 98004Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government**4a. The following fee(s) are enclosed:**

- ☒ Issue Fee
- ☒ Publication Fee (No small entity discount permitted)
- ☒ Advance Order - # of Copies 1

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 13-4500 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Date

9/7/05

Typed or printed name

James Hwa

Registration No.

42,680

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

To:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
-----	---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court United States District Court for the Western District of Washington on the following: X **Patents** or Trademarks:

DOCKET NO.	DATE FILED	US District Court United States District Court for the Western District of Washington
2:08-cv-01080-BAT	7/15/08	
PLAINTIFF		DEFENDANT
Implicit Networks Inc.		International Business Machines Corporation et al.
PATENT OR TRADEMARK NO.	PATENT OR TRADEMARK NO.	PATENT OR TRADEMARK NO.
1. See attached page for patent numbers	6.	11.
2. <u>6,324,685</u>	7.	12.
3.	8.	13.
4. <u>6,976,248</u>	9.	14.
5.	10.	15.

In the above-entitled case, the following patents(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	Amendment <u> </u> Answer <u> </u> Cross Bill <u> </u> Other Pleading <u> </u>	
PATENT OR TRADEMARK NO.	PATENT OR TRADEMARK NO.	PATENT OR TRADEMARK NO.
1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	14.
5.	10.	15.

In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION/JUDGMENT

CLERK	(BY) DEPUTY CLERK	DATE
Bruce Rifkin	Rachel Evans	7/16/08

U.S. Patent

Nov. 27, 2001

Sheet 1 of 3

US 6,324,685 B1

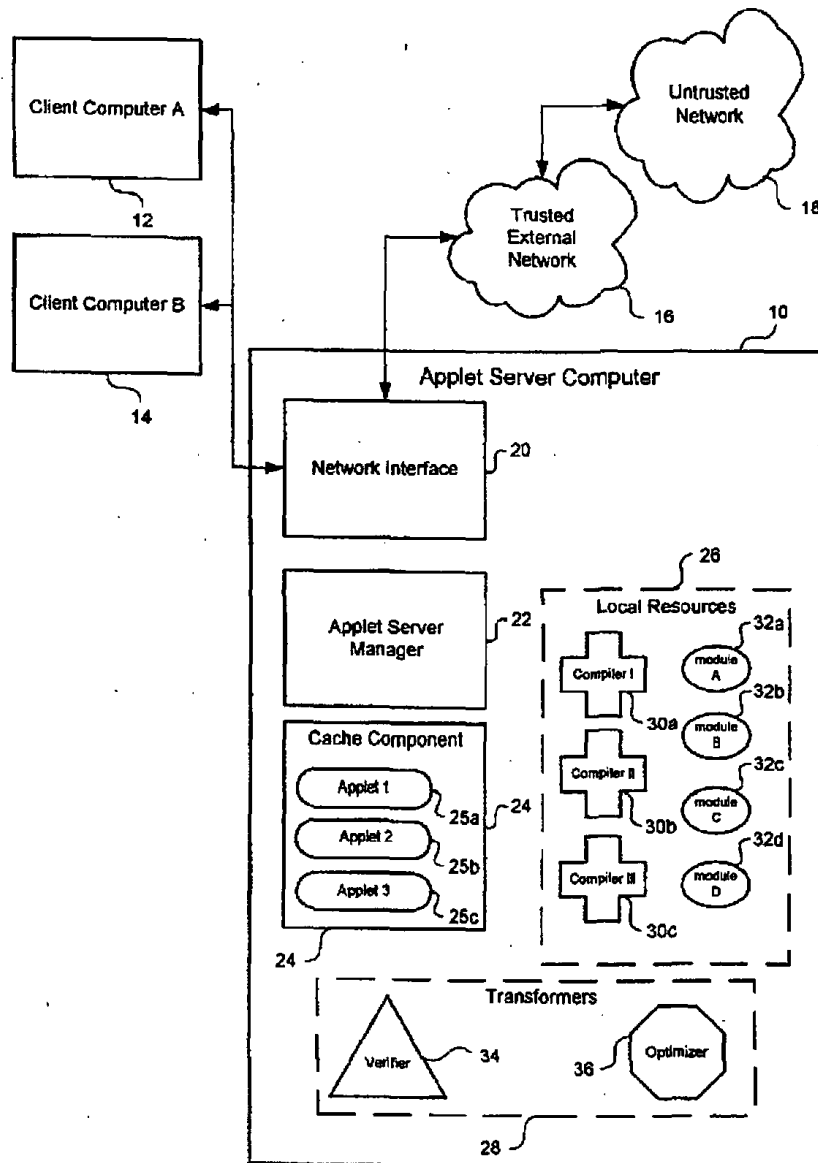


Fig. 1

U.S. Patent

Nov. 27, 2001

Sheet 2 of 3

US 6,324,685 B1

Request Data Type

Field	Value
Applet-URL	(String) specifies the name of the requested applet
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86)
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.

Fig. 2A**Code Data Type**

Field	Value
Applet-URL	(String) specifies the name of the requested applet
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86)
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.
Applet Length	(0-2 ³²) specifies the size of the requested applet.
Applet Code	The Requested Applet in the form specified by the request data type.

Fig. 2B

U.S. Patent

Nov. 27, 2001

Sheet 3 of 3

US 6,324,685 B1

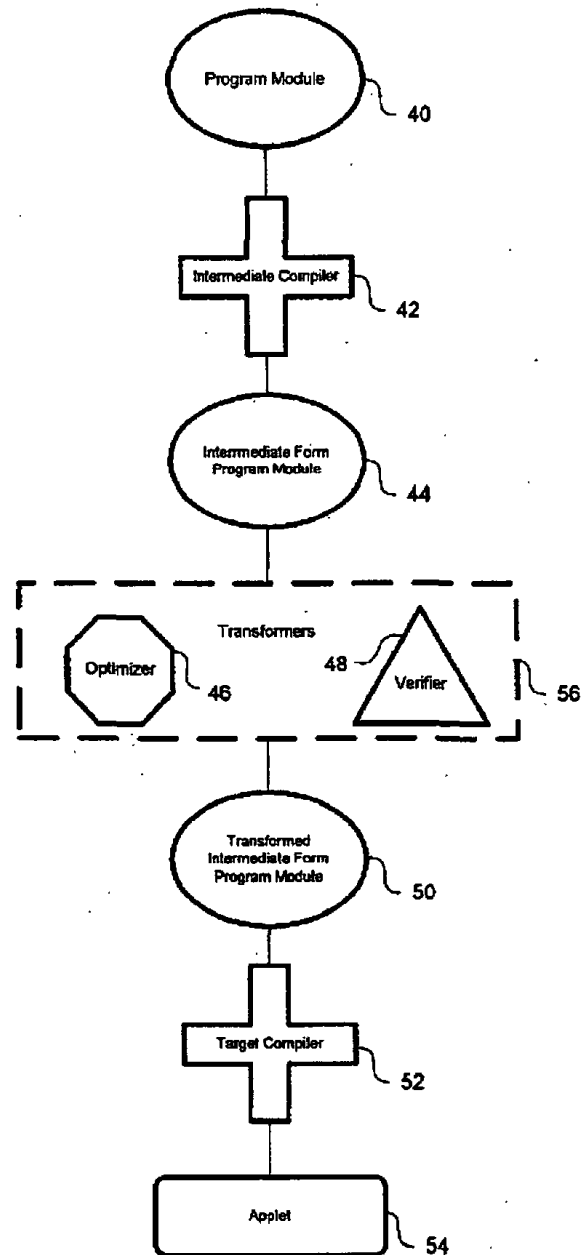


Fig. 3

US 6,324,685 B1

1

APPLET SERVER THAT PROVIDES APPLETS IN VARIOUS FORMS

FIELD OF THE INVENTION

The present invention relates to computer operating systems and, in particular, to a server architecture providing application caching and security verification.

BACKGROUND OF THE INVENTION

The growth of the Internet's importance to business, along with the increased dependence upon corporate networks, has created a demand for more secure and efficient computer systems. The traditional solution to this problem has been to depend upon improvements in hardware performance to make up for the performance penalty that is typically incurred when a computer system is made more secure and stable. Increased interconnectivity has also created a need for improved interoperability amongst a variety of computers that are now connected to one another. One solution to the problem of the variety of computers interconnected via the Internet and corporate networks has been the development of portable architecture neutral programming languages. The most widely known of these is Java, though, there are numerous other architecture neutral languages.

Architecture neutral programming languages allow programs downloaded from a server computer to a client computer to be interpreted and executed locally. This is possible because the compiler generates partially compiled intermediate byte-code, rather than fully compiled native machine code. In order to run a program, the client machine uses an interpreter to execute the compiled byte-code. The byte-codes provide an architecture neutral object file format, which allows the code to be transported to multiple platforms. This allows the program to be run on any system which implements the appropriate interpreter and run-time system. Collectively, the interpreter and runtime system implement a virtual machine. This structure results in a very secure language.

The security of this system is premised on the ability of the byte-code to be verified independently by the client computer. Using Java or some other virtual machine implementing technology, a client can ensure that the downloaded program will not crash the user's computer or perform operations for which it does not have permission.

The traditional implementations of architecture neutral languages are not without problems. While providing tremendous cross platform support, the current implementations of architecture neutral languages require that every client performs its own verification and interpretation of the intermediate code. The high computation and memory requirements of a verifier, compiler and interpreter restrict the applicability of these technologies to powerful client computers.

Another problem with performing the verification process on the client computer is that any individual within an organization may disable some or all of the checks performed on downloaded code. The current structure of these systems makes security management at the enterprise level almost impossible. Since upgrades of security checking software must be made on every client computer, the cost and time involved in doing such upgrades makes it likely that outdated or corrupt copies of the verifier or interpreter exist within an organization. Even when an organization is diligent in maintaining a client based security model, the size of the undertaking in a large organization increases the likelihood that there will be problems.

2

There is a need for a scalable distributed system architecture that provides a mechanism for client computers to request and execute applets in a safe manner without requiring the client machines to have local resources to compile or verify the code. There is a further need for a system in which the applets may be cached in either an intermediate architecture neutral form or machine specific form in order to increase overall system performance and efficiency.

SUMMARY OF THE INVENTION

In accordance with one embodiment of the invention, an applet server architecture is taught which allows client computers to request and execute applets in a safe manner without requiring the client to have local resources to verify or compile the applet code. Compilation and byte-code verification in the present invention are server based and thereby provide more efficient use of resources and a flexible mechanism for instituting enterprise-wide security policies. The server architecture also provides a cache for applets, allowing clients to receive applet code without having to access nodes outside the local network. The cache also provides a mechanism for avoiding repeated verification and compilation of previously requested applet code since any client requesting a given applet will have the request satisfied by a single cache entry.

Machine specific binary code is essentially interpreted code since the processor for a given computer can essentially be viewed as a form of an interpreter, interpreting binary code into the associated electronic equivalents. The present invention adds a level of indirection in the form of an intermediate language that is processor independent. The intermediate language serves as the basis for security verification, code optimizations, or any other compile time modifications that might be necessary. The intermediate form allows a single version of the source to be stored for many target platforms instead of having a different binary for each potential target computer. Compilations to the target form can either be done at the time of a cache hit or they can be avoided all together if the target machine is able to directly interpret the intermediate form. If the compilation is done on the server, then a copy of the of the compiled code as well as the intermediate form can be stored in the cache. The performance advantage derived from caching the compiled form as well as the intermediate depends upon the number of clients with the same CPU.

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as other features and advantages thereof will best be understood by reference to the detailed description which follows, when read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is diagram showing the major components which may be used to implement an applet server in one embodiment of the present invention;

FIG. 2a is a table which illustrates the structure of the request format data type;

FIG. 2b is a table which illustrates the structure of the returned code data type.

FIG. 3 is a diagram showing the compilation and transformation of a program module into an applet in a particular form.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, an applet server architecture according to one embodiment of the invention is based on an applet

US 6,324,685 B1

server computer 10 which in turn is connected to client computer A12, client computer B14, an external network 16 and an untrusted network 18. The applet server computer 10 connects to client computers 12 and 14, an external network 16, and an untrusted network 18 by means of a network interface 20. Typically this connection will involve one or more of the computers or networks having a connection to the Internet.

The applet server computer 10 accomplishes its objectives by manipulating computer programs in several formats. An applet (e.g. applets 1-3, 25a-25c) is any form of program instructions, whether in binary, source or intermediate format. In the case of this architecture, the applet code can either be a self contained program, or it can be a code fragment associated with a larger application.

Binary format refers to processor specific machine instructions suitable for running natively on a given computing platform (also referred to as "target" because of the concept of "targeting" a compiler to produce binary code for a given processor type).

Source refers to non-binary applet code, generally in the form of higher level languages (i.e. C, C++, Java, Visual Basic, ActiveX, Fortran, and Modula).

Intermediate format refers to a common intermediate byte-code that is produced by compiling a given source code input. The intermediate byte-code need not necessarily be Java byte-code.

Treating applets in this general sense allows client computers 12 and 14 to request not only applications, but portions of applications. Client computers 12 and 14 are thus able to use applet server computer 10 as the equivalent of a loader, loading in appropriate parts of the application in the form of applets. In turn client computers 12 and 14 can run large applications without requiring that the client computers 12 and 14 have the resources to store the entire application in memory at once.

Having the applets delivered from applet server computer 10 allows code in intermediate form to be verified, optimized, and compiled before being transmitted to client computers 12 and 14. This reduces the amount of work the client computers 12 and 14 have to do and provides a convenient way to impose global restrictions on code.

In operation, client computer A 12 transmits a request to an applet server computer 10 requesting an applet in a particular form. The form may be selected from a large matrix of many possible forms that can be recognized by the system. The request specifies the format (source, intermediate, or binary) in which the client wishes to receive the applet. The request may also specify that the applet be verified or have some other transformation operation performed upon it. Verification, optimization and compression are examples of types of transformation operations. The request is received by the network interface 20 of the applet server computer 10 which passes the request onto the applet server manager 22.

After interpreting the request, the applet server manager 22 checks to see if the requested applet is available in the cache 24. The cache 24 stores applets in a variety of formats (source, intermediate, or binary). If the requested form of the applet is available in the cache 24 (applet 1 25a, applet 2 25b, or applet 3 25c in this example) the applet server manager 22 instructs the network interface 20 to transmit the applet to requesting client computer A 12. If the requested applet is not available in the cache 24, then the applet server manager 22 will attempt to build the requested applet from local resources 26 and one or more transformation opera-

tions performed by one or more of the transformers 28. Local resources 26 are comprised of compilers 30a, 30b and 30c and program code modules 32a, 32b, 32c and 32d. The requested applet is built by selecting one or more program code modules 32 and compiling them with one or more compilers 30. Transformer operations may be performed by the verifier 34 or the optimizer 36. After the applet server manager 22 builds the applet, the network interface 20 transmits the applet to the requesting client computer A 12.

If the request can not be satisfied by building the applet from local resources 26 and transformers 28, the applet server manager 22 will pass a request for the requested applet to external network 16 and/or untrusted network 18. The applet server manager 22 may request the applet in intermediate form or in executable form or it may request the local resources 26 and transformers 28 it needs to complete building the applet itself.

The cache 24 is capable of responding to the following commands: GET, PUT, and FLUSH. GET is used to retrieve a given applet from the cache. PUT is used to store an applet in the cache. FLUSH is used to clear the cache of one or more entries. When the cache is unable to locate an item in response to a GET operation, it returns a cache miss. The program which issued the GET command is then responsible for locating the desired form of the applet by other means and optionally storing it in the cache when it is retrieved (using the PUT operation). The FLUSH command will clear the cache of one or more entries and any subsequent GETs for the FLUSHed applet code will result in a cache miss. This is useful if a particular applet needs to be updated from a remote server on a periodic basis. When using PUT, the program issuing the command specifies a time to live (TTL) in the cache. When the TTL expires, the cache entry is removed by means of a FLUSH operation.

Local resources 26 are comprised of program modules 32 (applets in source form, not the requested form) and compilers 30. The program modules 32 are run through the compilers 30 in order to produce applets in the requested form. The applet server manager 20 may also direct the modules 32 to be processed by a verifier 34 or another transformer such as an optimizer 36. Program modules 32 are program code used to build applets. Program modules 32 may be stored in local resources 26 in source, binary, or intermediate formats. When an applet is built it may require the operation of one or more compilers 30 upon one or more program modules 32. The program modules 32 may be combined and recompiled with previously cached applets and the resulting applet may be also cached for use at a future time. Additionally, program modules 32, compilers 30 and transformers 28 (including verifiers 34 and optimizers 36) may be distributed across a network. The applet server manager 22 may pass requests for the components it needs to build a particular applet back to the network interface 20 which in turn passes the request onto the rest of the network and may include external network 16 and untrusted network 18.

FIG. 3 provides further illustration of how an applet is produced from local resources and transformers. In this illustration the request is for an optimized and verified applet compiled to a machine specific form. A program module 40 is compiled into an intermediate form program module 44 by an intermediate compiler 42. The intermediate form program module 44 is then transformed by an optimizer 46 or a verifier 48. The resulting transformed intermediate form program module 50 is then compiled by target compiler 52 into machine specific code applet 54.

There are two types of compilers used to build applets: intermediate compilers 42 and target compilers 52. The

US 6,324,685 B1

5

intermediate compiler 42 compiles program modules (source applet code) 40 and produces a common intermediate pseudo-binary representation of the source applet code (intermediate form program module 44). The word pseudo is used because the intermediate form 44 is not processor-specific but is still a binary representation of the source program module 40. This intermediate form can be re-targeted and compiled for a particular processor. Alternatively, the intermediate form 44 can be interpreted by an interpreter or virtual machine that understands the internal binary representation of the intermediate form. A target compiler 52 compiles intermediate applet code 44 into an applet 54 in a processor specific format (binary) suitable for running natively on a given computing platform.

Transformers 56 are programs that take in intermediate code and put out intermediate code. Transformers 56 are generally used for things like verification and optimization. Other transformers might include compressors that identify portions of code that can be replaced with smaller equivalents. Transformers can be matched up to any other component that takes in intermediate code as an input. These include the cache 24 and the target compilers 52. Global policies for transformers 56 can be implemented which ensure that all applets are run through some set of transformers before being returned to the client.

A verifier 48 is a type of transformer that is able to analyze input code and determine areas that might not be safe. The verifier 48 can determine the level of safety. Some verifiers 48 look for areas where unsafe or protected memory is being accessed, others might look for accesses to system resources such as I/O devices. Once a verifier 48 determines the portion of unsafe applet code several steps can be taken. The offending code portion can be encased with new code that specifically prevents this unsafe code section from being executed. The unsafe code can be modified to be safe. The unsafe code can be flagged in such a way that a user can be warned about the possible risks of executing the code fragment. The verifier's role can therefore be summarized as determining where unsafe code exists and possibly altering the offending code to render it harmless. Verifiers 48 can operate on any format of input code, whether in source, intermediate or binary form. However, since intermediate code is a common format, it is most efficient to have a single verifier that will operate on code in this format. This eliminates the need to build specific knowledge of various source languages into the verifier. Verifiers 48 are a form of a transformer. Verifiers 48 take in intermediate code and put out verified intermediate code. Verifiers 48 are responsible for identifying non-secure portions of code in the intermediate code and modifying this code to make it secure. Security problems generally include access to memory areas that are unsafe (such as system memory, or memory outside the application space of the applet).

The choice of adding in the verification step can be left up to the client computer 12, the applet server computer 10 (see FIG. 1), or can be based on the network that the applet originated from. Server managers can institute global policies that affect all clients by forcing all applets to be run through the verifier 48. Alternatively, verification can be reserved for un-trusted networks (18 in FIG. 1), or it can be left up to the client to determine whether the verification should be performed. In the preferred embodiment, verification level is determined by the applet server 10. In this way, a uniform security policy may be implemented from a single machine (i.e., the applet server 10).

Optimizers 46 are another type of transformer program. Optimizers 46 analyze code, making improvements to well

6

known code fragments by substituting in optimized but equivalent code fragments. Optimizers 46 take in intermediate code 44 and put out transformed intermediate code 50. The transformed intermediate code 50 is functionally equivalent to the source intermediate code 44 in that they share the same structure.

Referring again to FIG. 1, policies may be instituted on the applet server 10 that force a certain set of request parameters regardless of what the client asked for.

For example, the applet server manager 22 can run the applet through a verifier 34 or optimizer 36 regardless of whether the client 12 requested this or not. Since the server 10 might have to go to an untrusted network 18 to retrieve a given applet, it will then run this applet through the required transformers 28, particularly the verifier 34 before returning it to the client 12. Since clients 12 and 14 have to go through the applet server computer 10, this ensures that clients 12 and 14 do not receive applets directly from an untrusted network 18. In addition, since the server will be dealing directly with untrusted network 18, it can be set up to institute policies based on the network. A trusted external network 16 may be treated differently than an untrusted network 18. This will provide the ability to run a verifier 34 only when dealing with an untrusted network 18, but not when dealing with a trusted external network 16. In one embodiment, all intermediate code is passed through a verifier 34 and the source of the code merely determines the level of verification applied.

The client 12 is the target computer on which the user wishes to execute an applet. The client 12 requests applets from the server 10 in a specific form. Applets can be requested in various formats including source, intermediate and binary. In addition, an applet can be requested with verification and/or other compile time operations. Optionally, the client 12 can pass a verifier to the server to provide verification. If the server 10 implements its own security, then both the client and server verifiers will be run. The verifier that is passed from the client to the server is cached at the server for subsequent verification. The client can refer to this verifier by a server-generated handle to avoid having to pass the verifier each time an applet is requested.

Client computers 12 and 14 requesting applet code in intermediate format need to have an interpreter or virtual machine capable of interpreting the binary code in the intermediate format if the applet is to be executed on the client machine.

In the preferred embodiment, requests to the applet server are in a format similar to those of an HTTP header and are comprised of tags and values. In one embodiment, an HTTP GET method is used to make the request (though use of the HTTP protocol is not necessary to implement the present invention). The request is made up of a series of tags which specify the requested applet, the platform on which it is to be run and the type of code (source/intermediate/binary), a verification level and an optimization level. New tags and values can be added to extend functionality as needed and the applet server manager 22 will discard any tag it does not recognize. When the applet server computer 10 returns the requested applet to the requesting client computer 12, it will transmit the request header followed by the applet code. In this instance, the header will additionally include a field which defines the length of the applet code. FIG. 2 provides a table which illustrates the request format and the returned code format.

While this invention has been described with reference to specific embodiments, this description is not meant to limit

US 6,324,685 B1

7

the scope of the invention. Various modifications of the disclosed embodiments, as well as other embodiments of the invention, will be apparent to persons skilled in the art upon reference to this description. It is therefore contemplated that the appended claims will cover any such modifications or embodiments as fall within the scope of the invention.

I claim:

1. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms;

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer; and

caching the identified form of the application so that when another request is received for the application in the identified form, the identified form of the application can be sent without regenerating the identified form of the application.

2. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, when the server computer does not have the application in the other form, requesting the application in the other form from a computer other than the server computer;

generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer.

3. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application including when the server computer does not have the identified form of the application, requesting the application in the other form from a computer other than the server computer; and

sending the identified form of the application to the client computer.

4. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer

wherein the identified form is an intermediate form.

5. The method of claim 4 wherein the intermediate form is Java byte code.

8

6. The method of claim 4 wherein the intermediate form can be interpreted by an interpreter executing on the client computer.

7. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the identified form is a target form.

8. The method of claim 7 wherein the target form is directly executable by a processor of the client computer.

9. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the other form is a source form.

10. The method of claim 9 wherein the source form is Java source.

11. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, transforming the application into a transformed form; generating the identified form of the application from the transformed form of the application; and sending the identified form of the application to the client computer.

12. The method of claim 11 wherein the transforming is verifying the application.

13. The method of claim 11 wherein the transforming is optimizing the application.

14. The method of claim 11 wherein the transforming is compressing the application.

15. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application and caching the generated identified form so that when the identified form of the application has been stored in a cache, the identified form of the application is retrieved from the cache; and

sending the identified form of the application retrieved from the cache to the client computer.

16. A method in a server computer for providing applications to client computers, the method comprising:

US 6,324,685 B1

9

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the application is a portion of a larger application.

17. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the server computer functions as a loader for the client computer.

18. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the application is an applet.

19. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the application includes modules, wherein the generating includes generating of modules of the identified form, and wherein the generating includes combining modules of the identified form that were previously generated with modules of the identified form that are generated in response to receiving the request.

20. The method of claim 19 wherein the modules of the identified form that were previously generated are retrieved from a cache.

21. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, generating the identified form of the application from another form of the application; after generating the identified form of the application, storing the identified form of the application in a cache; and

10

sending the identified form of the application to the client computer.

22. The method of claim 21 including in response to receiving a flush request, removing the identified form of the application from the cache.

23. The method of claim 22 wherein the flush request is received from a computer other than the server computer.

24. The method of claim 21 including storing a time to live indicator with the stored identified form of the application.

25. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, transforming an intermediate form of the application into a transformed version of the intermediate form of the application; generating the identified form of the application from the transformed version of the intermediate form of the application; and sending the identified form of the application to the client computer.

26. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

in response to receiving the request, verifying the application; generating the identified form of the application from the verified application; and sending the identified form of the application to the client computer.

27. The method of claim 26 wherein the verifying is specified by the client computer.

28. The method of claim 26 wherein the verifying is specified by another computer.

29. The method of claim 26 wherein the verifying is specified by the server computer.

30. The method of claim 26 including receiving a verifier from the client computer.

31. The method of claim 30 including sending to the client computer a handle for the verifier so that the client computer can subsequently identify the verifier to the server computer.

32. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms;

transforming the application that is identified in the request using a common transformation;

in response to receiving the request, generating the identified form of the application from the transformed application; and sending the identified form of the application to the client computer.

33. A method in a server computer for providing applications to client computers, the method comprising:

receiving a request from a client computer, the request identifying an application and identifying a form of the application, the identified form being one of a plurality of available forms; and

US 6,324,685 B1

11

in response to receiving the request, generating the identified form of the application from another form of the application; and sending the identified form of the application to the client computer wherein the identified form indicates a processor of the client computer.

34. A method in a client computer for retrieving an application in an identified form, the method comprising: sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein after the server computer generated the identified form of the application, the server computer stored the identified form of the application in a cache so that when another request is received for the identified form of the application, the server computer can retrieve the identified form of the application without regenerating the identified form of the application.

35. A method in a client computer for retrieving an application in an identified form, the method comprising: sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer wherein when the server computer does not have the application in the other form, the server computer requests the other form of the application from a computer other than the server computer.

36. A method in a client computer for retrieving an application in an identified form, the method comprising: sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer; and

wherein the identified form is an intermediate form.

37. The method of claim 36 wherein the intermediate form is Java byte code.

38. The method of claim 36 wherein the intermediate form can be interpreted by an interpreter executing on the client computer.

39. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application

12

wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the identified form is a target form.

40. The method of claim 34 wherein the target form is directly executable by a processor of the client computer.

41. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the other form is a source form.

42. The method of claim 41 wherein the source form is Java source.

43. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the server computer transforms the application before generating the identified form the application.

44. The method of claim 43 wherein the transforming is verifying the application.

45. The method of claim 43 wherein the transforming is optimizing the application.

46. The method of claim 43 wherein the transforming is compressing the application.

47. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the server computer caches the identified form of the application and wherein the server computer subsequently retrieves the identified form of the application from the cache, rather than generating the identified form of the application.

48. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

US 6,324,685 B1

13

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the application is a portion of a larger application.
49. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the application is an applet.

50. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer wherein the application includes modules, wherein the server computer generates modules of the identified form, and wherein the server computer combines modules of the identified form that were previously generated with modules of the identified form that are generated in response to receiving the request.

51. The method of claim 50 wherein the modules of the identified form that were previously generated are retrieved by the server computer from a cache.

52. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the request includes an indication to verify the application.

53. The method of claim 52 including sending a verifier from the client computer to the server computer.

54. A method in a client computer for retrieving an application in an identified form, the method comprising:

sending to a server computer a request that identifies an application and identifies a form of the application, the identified form being one of a plurality of available forms; and

in response to sending the request, receiving from the server computer the identified form of the application

14

wherein the server computer generated the identified form of the application from another form of the application in response to receiving the request from the client computer

wherein the server computer transforms each application using a common transformation.

55. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request; and

caching the identified form of the applet so that when another request is received for the same applet in the identified form, the identified form of the applet can be sent without recompiling the identified form of the applet

whereby requests of different client computers identify different forms of the same applet.

56. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving the request, when the server computer does not have the applet in the un-compiled form, requesting the applet in the un-compiled form from a computer other than the server computer;

using a compiler to compile the identified form of the applet from the un-compiled form of the applet; and sending the identified form of the applet to the client computer that sent the request

whereby requests of different client computers identify different forms of the same applet.

57. The computer-readable medium of claim 56 wherein the other computer is accessible via the Internet.

58. The computer-readable medium of claim 56 wherein the server computer and client computer are connected to a local area network and the server computer and the other computer are connected via the Internet.

59. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the applet is part of a web page and whereby requests of different client computers identify different forms of the same applet.

60. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:



08-CV-01080-CMP

FILED
LOGGED ENTERED
RECEIVED

JUL 15 2008 IS

AT SEATTLE
CLERK U.S. DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
BY DEPUTY

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
SEATTLE DIVISION

IMPLICIT NETWORKS, INC.

Plaintiff

v.

INTERNATIONAL BUSINESS
MACHINES CORPORATION,
ORACLE CORPORATION,
SAP AMERICA, INC., and ADOBE
SYSTEMS INCORPORATED,

Defendants

C08 1080 BAT

C.A. NO. _____

PLAINTIFF'S ORIGINAL
COMPLAINT

JURY TRIAL DEMANDED

Plaintiff, Implicit Networks, Inc. ("Plaintiff"), files this Original Complaint against Defendants, International Business Machines Corporation ("IBM"), Oracle Corporation ("Oracle"), SAP America, Inc. ("SAP"), and Adobe Systems Incorporated ("Adobe"), and alleges as follows:

THE PARTIES

1. Plaintiff is a Washington corporation with its principal place of business in Seattle, Washington.

Plaintiff's Original Complaint

Page 1

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

US 6,324,685 B1

15

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the un-compiled form is an intermediate form and whereby requests of different client computers identify different forms of the same applet.

61. The computer-readable medium of claim 60 wherein the intermediate form is Java byte code.

62. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the identified form is directly executable by a processor of the client computer that sent the request and whereby requests of different client computers identify different forms of the same applet.

63. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the un-compiled form is a source form and whereby requests of different client computers identify different forms of the same applet.

64. The computer-readable medium of claim 63 wherein the source form is Java source.

65. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, transforming an un-compiled form of the applet, compiling using a compiler the identified form of the applet from the transformed, un-compiled form of the applet, and sending the identified form of the applet to the client computer that sent the request

whereby requests of different client computers identify different forms of the same applet.

66. The computer-readable medium of claim 65 wherein the transforming is verifying the applet.

67. The computer-readable medium of claim 65 wherein the transforming is optimizing the applet.

16

68. The computer-readable medium of claim 65 wherein the transforming is compressing the applet.

69. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible

compiled forms of the applet;

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request;

storing the identified form of the applet in a cache so that when another request is retrieved, the server computer retrieves the identified form of the applet from the cache and sends the identified form of the applet retrieved from the cache to the client computer

whereby requests of different client computers identify different forms of the same applet.

70. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the applet is a portion of a computer program and whereby requests of different client computers identify different forms of the same applet.

71. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the server computer functions as a loader for the client computer and whereby requests of different client computers identify different forms of the same applet.

72. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet;

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

wherein the applet includes multiple modules, wherein the server computer generates a module of the identi-

US 6,324,685 B1

17

fied form, and wherein the server computer compiles one of the modules into the identified form in response to receiving the request and whereby requests of different client computers identify different forms of the same applet.

73. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet;

in response to receiving, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request; and after generating the identified form of the applet, storing the identified form of the applet in a cache whereby requests of different client computers identify different forms of the same applet.

74. The computer-readable medium of claim 73 including in response to receiving a flush request, removing the identified form of the applet from the cache.

75. The computer-readable medium of claim 74 wherein the flush request is received from a computer other than the server computer.

76. The computer-readable medium of claim 73 including a storing time to live indicator with the stored identified form of the applet.

77. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet;

in response to receiving a request, transforming an intermediate form of the applet into a transformed version of the intermediate form of the applet and compiling using a compiler the identified form of the applet from the transformed intermediate form of the applet and sending the identified form of the applet to the client computer that sent the request; and

whereby requests of different client computers identify different forms of the same applet.

78. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet, a request including a verifier sent from the client computer for use in verifying the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request

whereby requests of different client computers identify different forms of the same applet.

79. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the

18

applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, transforming each applet that is identified in a request using a common transformation, compiling using a compiler the identified form of the applet from the transformed form of the applet, and sending the identified form of the applet to the client computer that sent the request

whereby requests of different client computers identify different forms of the same applet.

80. A computer-readable medium containing instructions for controlling a server computer to provide applets to client computers, by a method comprising:

receiving requests from client computers, each request identifying an applet and identifying a form of the applet, the identified form being one of a plurality of possible compiled forms of the applet; and

in response to receiving a request, using a compiler to compile the identified form of the applet from an un-compiled form of the applet and sending the identified form of the applet to the client computer that sent the request;

wherein the identified form indicates a processor of the client computer

whereby requests of different client computers identify different forms of the same applet.

81. A server computer for providing applets in a plurality of forms, comprising:

means for receiving from client computers requests for applets, each request identifying a form of the applet;

means for retrieving the applet identified in a request, the retrieved applet being in a form other than the form identified in the request;

means for generating the identified form of the applet from the retrieved other form of the applet after receiving the request;

means for sending the identified form of the applet to the client computer that requested the applet; and

means for caching the identified form of the applet so that when another request is received for the same applet in the identified form, the identified form of the applet can be sent without regenerating the identified form of the applet.

82. A server computer for providing applets in a plurality of forms, comprising:

means for receiving from client computers requests for applets, each request identifying a form of the applet;

means for retrieving the applet identified in a request, the retrieved applet being in a form other than the form identified in the request;

means for generating the identified form of the applet from the retrieved other form of the applet after receiving the request;

means for sending the identified form of the applet to the client computer that requested the applet; and

means for when the server computer does not have the applet in the other form, requesting the other form of the applet from a computer other than the server computer.

83. The server computer of claim 82 wherein the other computer is accessible via the Internet.

84. The server computer of claim 82 wherein the server computer and client computer are connected to a local area network and the server and the other computer are connected via the Internet.

US 6,324,685 B1

19

85. A server computer for providing applets in a plurality of forms, comprising:

means for receiving from client computers requests for applets, each request identifying a form of the applet;

means for retrieving the applet identified in a request, the retrieved applet being in a form other than the form identified in the request;

means for generating the identified form of the applet from the retrieved other form of the applet after receiving the request; and

means for sending the identified form of the applet to the client computer that requested the applet wherein the applet is part of a web page.

86. A server computer for providing applets in a plurality of forms, comprising:

means for receiving from client computers requests for applets, each request identifying a form of the applet;

means for retrieving the applet identified in a request, the retrieved applet being in a form other than the form identified in the request;

means for generating the identified form of the applet from the retrieved other form of the applet after receiving the request;

means for sending the identified form of the applet to the client computer that requested the applet; and

means for transforming the applet before generating the identified form of the applet.

87. The server computer of claim 86 wherein the transforming is verifying the applet.

88. A server computer for providing applets in a plurality of forms, comprising:

means for receiving from client computers requests for applets, each request identifying a form of the applet;

means for retrieving the applet identified in a request, the retrieved applet being in a form other than the form identified in the request;

means for generating the identified form of the applet from the retrieved other form of the applet after receiving the request;

means for sending the identified form of the applet to the client computer that requested the applet; and

means for, rather than generating the identified form of the applet, retrieving the identified form of the applet from a cache.

89. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein the server computer caches the identified form of the applet so that when another request is received for the same applet in the identified form, the identified form of the applet can be sent without recompiling the identified form of the applet.

90. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives

20

the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein in response to receiving the request, the server computer requests the applet in the un-compiled form from a computer other than the server computer.

91. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein the applet is part of a web page.

92. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein the un-compiled form is an intermediate form.

93. The computer-readable medium of claim 92 wherein the intermediate form is Java byte code.

94. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein the un-compiled form is a source form.

95. The computer-readable medium of claim 94 wherein the source form is Java source.

96. A computer-readable medium containing a data structure, the data structure including a request generated by a client computer, the request identifying an applet and identifying a form of the identified applet, the identified form being one of a plurality of compiled forms of the identified applet wherein when a server computer receives the request, the server computer uses a compiler to compile the identified form of the applet from an un-compiled form of the applet and then sends the identified form of the applet to the client computer that generated the request wherein the server computer transforms the applet before compiling the applet.

97. The computer-readable medium of claim 96 wherein the transforming is verifying the applet.

98. The computer-readable medium of claim 96 wherein the transforming is optimizing the applet.

99. A computer-readable medium containing instructions for controlling a client computer, the instructions being generated by a server computer in response to receiving a request from a client computer, the request identifying an applet and identifying a form of the applet, wherein the server computer generates the instructions by compiling a compiled form of the applet from an un-compiled form of

US 6,324,685 B1

21

the applet wherein the server computer retrieves the un-compiled form of the applet from a computer other than the server computer.

100. A computer-readable medium containing instructions for controlling a client computer, the instructions being generated by a server computer in response to receiving a request from a client computer, the request identifying an applet and identifying a form of the applet, wherein the server computer generates the instructions by compiling a compiled form of the applet from an un-compiled form of the applet wherein the server computer stores the compiled form of the applet in a cache.

101. A computer-readable medium containing instructions for controlling a client computer, the instructions being generated by a server computer in response to receiving a request from a client computer, the request identifying an applet and identifying a form of the applet, wherein the server computer generates the instructions by compiling a compiled form of the applet from an un-compiled form of the applet wherein the un-compiled form of the applet is Java intermediate code.

102. A computer-readable medium containing instructions for controlling a client computer, the instructions being generated by a server computer in response to receiving a request from a client computer, the request identifying an applet and identifying a form of the applet, wherein the server computer generates the instructions by compiling a compiled form of the applet from an un-compiled form of the applet wherein the un-compiled form of the applet is Java source code.

103. A computer-readable medium containing instructions for controlling a client computer, the instructions being generated by a server computer in response to receiving a request from a client computer, the request identifying an applet and identifying a form of the applet, wherein the server computer generates the instructions by compiling a compiled form of the applet from an un-compiled form of the applet wherein the instructions are part of a web page.

104. A server computer comprising:

local resources that include compilers and modules;

a cache for storing applets;

a transformer; and

an applet server manager that

receives requests from client computers for an applet in an identified form,

when the identified form of the applet is stored in the cache, sends the identified form of the applet stored in the cache to the client computer that sent the request, and

when the identified form of the applet is not stored in the cache, generates the identified form of the applet

22

using a compiler and a module, stores the identified form of the applet in the cache, and sends the identified form of the applet to the client computer that sent the request

wherein the applet server manager uses the transformer to transform the module before generating the identified form of the applet.

105. A server computer comprising:

local resources that include compilers and modules;

a cache for storing applets

a transformer; and

an applet server manager that

receives requests from client computers for an applet in an identified form,

when the identified form of the applet is stored in the cache, sends the identified form of the applet stored in the cache to the client computer that sent the request,

when the identified form of the applet is not stored in the cache, generates the identified form of the applet using a compiler and a module, stores the identified form of the applet in the cache, and sends the identified form of the applet to the client computer that sent the request

wherein the applet server manager uses the transformer to transform the identified applet after it is generated using the compiler.

106. A server computer comprising:

local resources that include compilers and modules;

a cache for storing applets; and

an applet server manager that

receives requests from client computers for an applet in an identified form,

when the identified form of the applet is stored in the cache, sends the identified form of the applet stored in the cache to the client computer that sent the request, and

when the identified form of the applet is not stored in the cache, generates the identified form of the applet using a compiler and a module, stores the identified form of the applet in the cache, and sends the identified form of the applet to the client computer that sent the request

wherein the applet server manager retrieves a module from a computer other than the server computer when a module that is not another form of the applet is not stored with the local resource.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,324,685 B1
DATED : November 27, 2001
INVENTOR(S) : Edward Balassanian

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 3,

Line 64, after "A 12." begin a new paragraph;

Column 5,

Line 31, delete "10" and insert -- 10 --;

Column 6,

Line 10, the paragraph beginning with "For" should be part of the preceding paragraph;

Column 12,

Line 6, delete "34" and insert -- 39 --;

Column 17,

Line 13, after "receiving" insert -- a request --; and

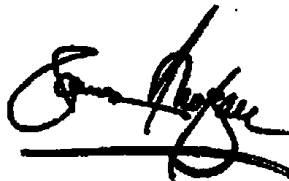
Column 19,

Line 38, delete the comma after "request" and insert a semicolon.

Signed and Sealed this

Twenty-third Day of July, 2002

Attest:



Attesting Officer

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

US006976248B2

(12) **United States Patent**
Balassanian(10) Patent No.: **US 6,976,248 B2**(45) Date of Patent: **Dec. 13, 2005**(54) **APPLICATION SERVER FACILITATING
WITH CLIENT'S COMPUTER FOR APPLET
ALONG WITH VARIOUS FORMATS**(75) Inventor: **Edward Balassanian, Kirkland, WA
(US)**(73) Assignee: **Implicit Networks, Inc., Bellevue, WA
(US)**(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 478 days.(21) Appl. No.: **09/968,704**(22) Filed: **Oct. 1, 2001**(65) **Prior Publication Data**

US 2002/0100038 A1 Jul. 25, 2002

Related U.S. Application Data(63) Continuation of application No. 09/040,972, filed on Mar.
18, 1998, now Pat. No. 6,324,685.(51) Int. Cl.⁷ **G06F 9/45**
(52) U.S. Cl. **717/148; 717/140; 709/203**
(58) Field of Search **717/116, 118,
717/136, 139, 140-142, 148, 151, 152,
165, 162, 166; 709/203, 223**(56) **References Cited****U.S. PATENT DOCUMENTS**

5,706,502 A	*	1/1998	Foley et al.	707/10
5,761,421 A	*	6/1998	van Hoff et al.	709/223
5,805,829 A	*	9/1998	Cohen et al.	709/202
5,828,840 A	*	10/1998	Cowan et al.	709/203
5,848,274 A	*	12/1998	Hamby et al.	
5,872,915 A	*	2/1999	Dykes et al.	
5,884,078 A	*	3/1999	Faustini	
6,230,184 B1	*	5/2001	White et al.	709/201
6,282,702 B1	*	8/2001	Ungar	717/148
6,295,643 B1	*	9/2001	Brown et al.	717/148
6,321,377 B1	*	11/2001	Beadle et al.	717/148

6,324,685 B1	*	11/2001	Balassanian	717/118
6,336,213 B1	*	1/2002	Beadle et al.	717/136
6,446,081 B1	*	9/2002	Preston	707/104.1
6,594,820 B1	*	7/2003	Ungar	717/124
6,636,900 B2	*	10/2003	Abdelnur	719/316
6,704,926 B1	*	3/2004	Blandy et al.	717/148
6,742,165 B2	*	5/2004	Lev et al.	716/1
6,745,386 B1	*	6/2004	Yellin	717/166
6,836,889 B1	*	12/2004	Chan et al.	719/310
6,842,897 B1	*	1/2005	Beadle et al.	718/1

OTHER PUBLICATIONS

Yang et al., "Developing integrated web and database applications using JAVA applets and JDBC drivers", ACM SIG-SCE, pp 302-306, 1998.*

Newsome et al., "Proxy compilation of dynamically loaded Java classes with MoJo", ACM I.C.TES, pp 204-212, Jun. 2002.*

Begole et al., "Transparent sharing of Java applets: a replicated approach", ACM UIST, pp 55-64, 1997.*

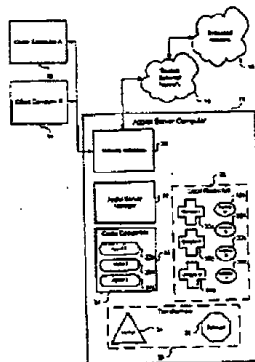
(Continued)

Primary Examiner—Anil Khatri

(74) Attorney, Agent, or Firm—Morgan & Finnegan, LLP

(57) **ABSTRACT**

The present invention is an applet server which accepts requests for applets from client computers. A request specifies the format in which an applet is to be delivered to the requesting client computer. The applet server has a cache which it uses to store applets for distribution to client computers. If the specified form of the requested applet is available in the cache, the applet server transmits the applet to the requesting client. If the applet is not available in the cache, the server will attempt to build the applet from local resources (program code modules and compilers) and transformer programs (verifiers and optimizers). If the applet server is able to build the requested applet, it will then transmit the applet to the requesting client computer. If the applet server is unable to build the requested applet, it will pass the request to another applet server on the network for fulfillment of the request.

13 Claims, 3 Drawing Sheets

PLAINTIFF'S ORIGINAL COMPLAINT
ATTACHMENT B-24

24

US 6,976,248 B2

Page 2

OTHER PUBLICATIONS

Benton et al., "Compiling standard ML to java bytecode", ACM ICSE, pp 129-140.*

Sirer, Emin Gün, "Java-Relevant Articles in the Press," [Accessed Oct. 4, 2000].

"Project Members" <http://kimera.cs.washington.edu/members.html> [Accessed Oct. 4, 2000].

Emin Gün Sirer, et al., "Distributed Virtual Machines: A System Architecture for Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington <http://kimera.cs.washington.edu> Feb. 26, 1998.

Emin Gün Sirer, et al., "Design and Implementation of a Distributed Virtual Machine for Networked Computers," University of Washington, Department of Computer Science and Engineering, Seattle, Washington, 17th ACM Symposium on Operating system Principles, Dec. 1999.

Sirer, Emin Gün, "A System Architecture for Next Generation Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington Jun. 26, 1998.

[Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera—A System Architecture for Networked Computers," [Accessed Oct. 4, 2000].

Emin Gün Sirer and Brian Bershad, "Kimera Architecture," [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Security Flaws in Java Implementations," [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera Bytecode Verification," [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera Test Suite," [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera Disassembler," [Accessed Oct. 4, 2000].

* cited by examiner

U.S. Patent

Dec. 13, 2005

Sheet 1 of 3

US 6,976,248 B2

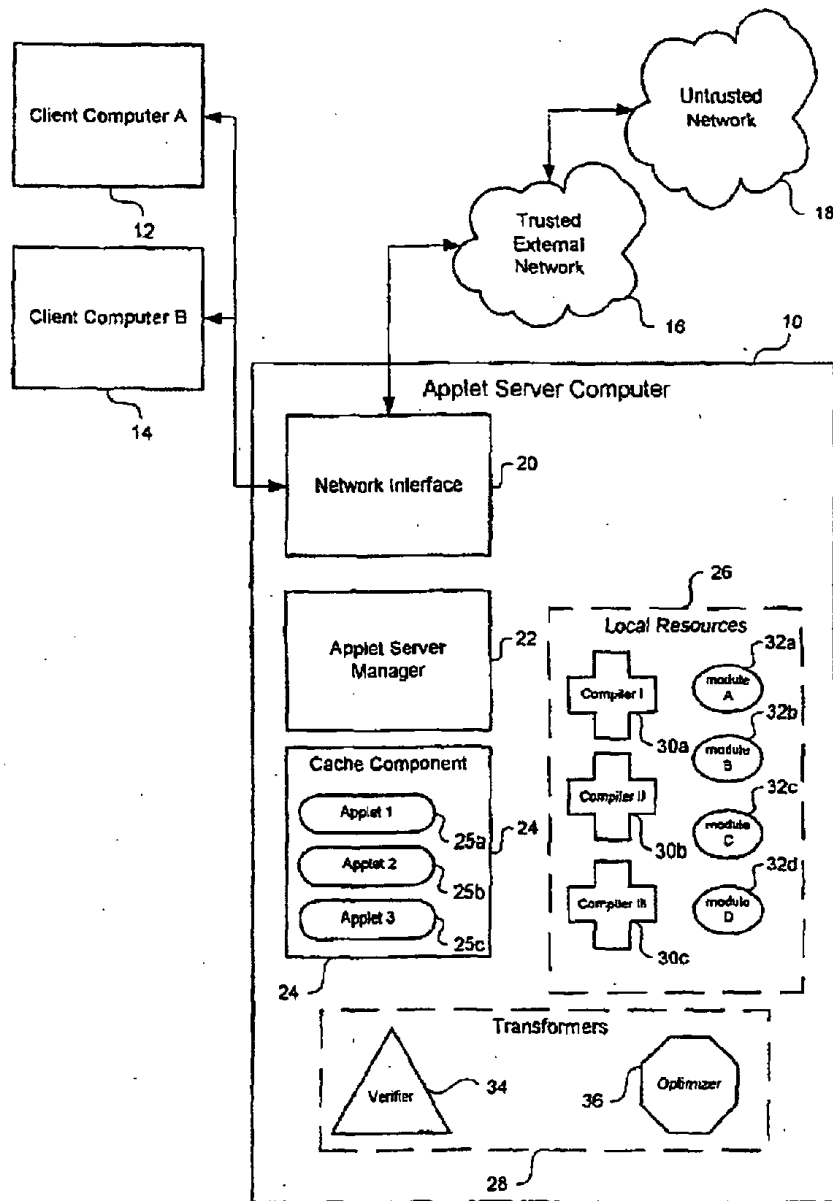


Fig. 1

U.S. Patent

Dec. 13, 2005

Sheet 2 of 3

US 6,976,248 B2**Request Data Type**

Tag	Value
Applet-URL	(String) specifies the name of the requested applet.
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86).
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.

Fig. 2A**Code Data Type**

Tag	Value
Applet-URL	(String) specifies the name of the requested applet.
Code-Type	(Source/Intermediate/Binary) specifies the format the applet is to be delivered to the requesting client in. A request for binary would specify the CPU of the requesting client (e.g., x86).
Verification-Level	(0-100) specifies the degree of verification to be performed. 0 = no/minimal verification, 100 = maximum verification (highest level of security).
Optimization-Level	(0-100) specifies the degree of optimization to be performed. 0 = no/minimal optimization, 100 = maximum optimization.
Applet Length	(0-2 ³²) specifies the size of the requested applet.
Applet Code	The Requested Applet in the form specified by the request data type.

Fig. 2B

U.S. Patent

Dec. 13, 2005

Sheet 3 of 3

US 6,976,248 B2

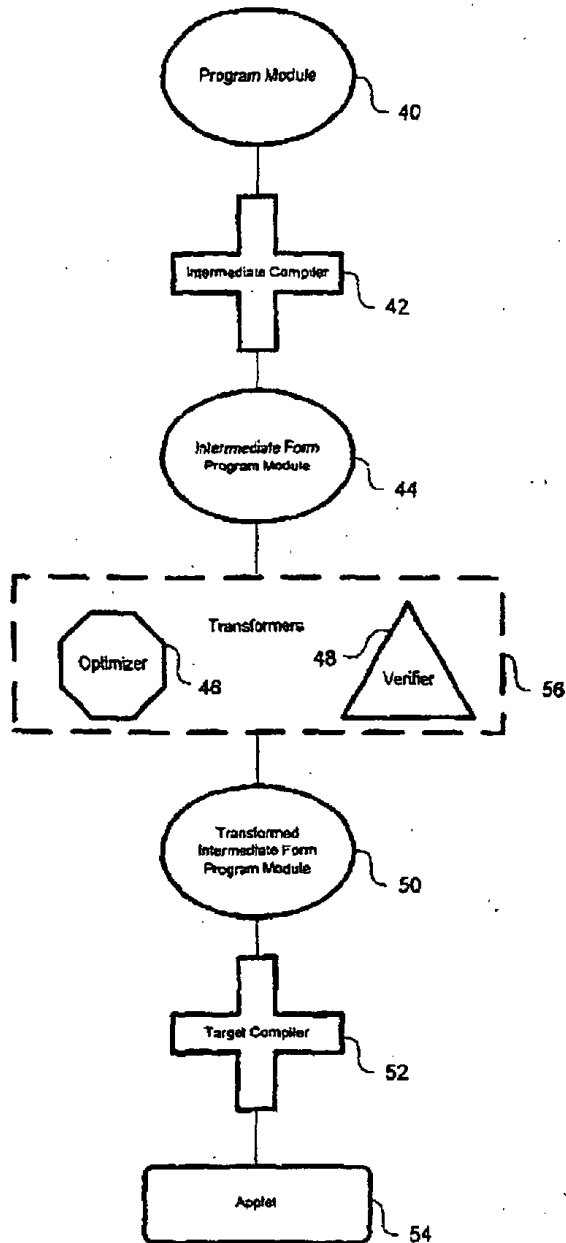


Fig. 3

1 2. IBM, on information and belief, is a corporation organized under the laws of the State of
2 New York. IBM is doing business in Washington, and, on information and belief, has a
3 principal place of business at North Castle Drive, Armonk, New York 10504. IBM may be
4 served with process by serving its registered agent, CT Corporation System, 350 North Saint
5 Paul Street, Dallas, Texas 75201.
6

7 3. Oracle, on information and belief, is a corporation organized under the laws of the State of
8 Delaware. Oracle is doing business in Washington, and, on information and belief, has a
9 principal place of business at 500 Oracle Parkway, Redwood Shores, California 94065.
10 Oracle may be served with process by serving its registered agent, Corporation Service
11 Company dba CSC, 701 Brazos Street, Suite 1050, Austin, Texas 78701.
12

13 4. SAP, on information and belief, is a corporation organized under the laws of the State of
14 Delaware. SAP is doing business in Washington, and, on information and belief, has a
15 principal place of business at 3999 West Chester Pike, Newton Square, Pennsylvania 19073.
16 SAP may be served with process by serving its registered agent, CT Corporation System,
17 350 North Saint Paul Street, Dallas, Texas 75201.
18

19 5. Adobe, on information and belief, is a corporation organized under the laws of the State of
20 Delaware. Adobe is doing business in Washington, and, on information and belief, has a
21 principal place of business at 345 Park Avenue, San Jose, California 95110. Adobe may be
22 served with process by serving its registered agent, Corporation Service Company dba CSC,
23 701 Brazos Street, Suite 1050, Austin, Texas 78701.
24

25
26 //

27 //

28 Plaintiff's Original Complaint

Page 2

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

US 6,976,248 B2

1

APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS

CROSS-REFERENCE TO RELATED APPLICATION(S)

This application is a continuation of U.S. patent application Ser. No. 09/040,972, filed Mar. 18, 1998, now U.S. Pat. No. 6,324,685.

FIELD OF THE INVENTION

The present invention relates to computer operating systems and, in particular, to a server architecture providing application caching and security verification.

BACKGROUND OF THE INVENTION

The growth of the Internet's importance to business, along with the increased dependence upon corporate networks, has created a demand for more secure and efficient computer systems. The traditional solution to this problem has been to depend upon improvements in hardware performance to make up for the performance penalty that is typically incurred when a computer system is made more secure and stable. Increased interconnectivity has also created a need for improved interoperability amongst a variety of computers that are now connected to one another. One solution to the problem of the variety of computers interconnected via the Internet and corporate networks has been the development of portable architecture neutral programming languages. The most widely known of these is Java, though, there are numerous other architecture neutral languages.

Architecture neutral programming languages allow programs downloaded from a server computer to a client computer to be interpreted and executed locally. This is possible because the compiler generates partially compiled intermediate byte-code, rather than fully compiled native machine code. In order to run a program, the client machine uses an interpreter to execute the compiled byte-code. The byte-codes provide an architecture neutral object file format, which allows the code to be transported to multiple platforms. This allows the program to be run on any system which implements the appropriate interpreter and run-time system. Collectively, the interpreter and runtime system implement a virtual machine. This structure results in a very secure language.

The security of this system is premised on the ability of the byte-code to be verified independently by the client computer. Using Java or some other virtual machine implementing technology, a client can ensure that the downloaded program will not crash the user's computer or perform operations for which it does not have permission.

The traditional implementations of architecture neutral languages are not without problems. While providing tremendous cross platform support, the current implementations of architecture neutral languages require that every client performs its own verification and interpretation of the intermediate code. The high computation and memory requirements of a verifier, compiler and interpreter restrict the applicability of these technologies to powerful client computers.

Another problem with performing the verification process on the client computer is that any individual within an organization may disable some or all of the checks performed on downloaded code. The current structure of these

2

systems makes security management at the enterprise level almost impossible. Since upgrades of security checking software must be made on every client computer, the cost and time involved in doing such upgrades makes it likely that outdated or corrupt copies of the verifier or interpreter exist within an organization. Even when an organization is diligent in maintaining a client based security model, the size of the undertaking in a large organization increases the likelihood that there will be problems.

There is a need for a scalable distributed system architecture that provides a mechanism for client computers to request and execute applets in a safe manner without requiring the client machines to have local resources to compile or verify the code. There is a further need for a system in which the applets may be cached in either an intermediate architecture neutral form or machine specific form in order to increase overall system performance and efficiency.

SUMMARY OF THE INVENTION

In accordance with one embodiment of the invention, an applet server architecture is taught which allows client computers to request and execute applets in a safe manner without requiring the client to have local resources to verify or compile the applet code. Compilation and byte-code verification in the present invention are server based and thereby provide more efficient use of resources and a flexible mechanism for instituting enterprise-wide security policies. The server architecture also provides a cache for applets, allowing clients to receive applet code without having to access nodes outside the local network. The cache also provides a mechanism for avoiding repeated verification and compilation of previously requested applet code since any client requesting a given applet will have the request satisfied by a single cache entry.

Machine specific binary code is essentially interpreted code since the processor for a given computer can essentially be viewed as a form of an interpreter, interpreting binary code into the associated electronic equivalents. The present invention adds a level of indirection in the form of an intermediate language that is processor independent. The intermediate language serves as the basis for security verification, code optimizations, or any other compile time modifications that might be necessary. The intermediate form allows a single version of the source to be stored for many target platforms instead of having a different binary for each potential target computer. Compilations to the target form can either be done at the time of a cache hit or they can be avoided all together if the target machine is able to directly interpret the intermediate form. If the compilation is done on the server, then a copy of the of the compiled code as well as the intermediate form can be stored in the cache. The performance advantage derived from caching the compiled form as well as the intermediate depends upon the number of clients with the same CPU.

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as other features and advantages thereof will best be understood by reference to the detailed description which follows, when read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is diagram showing the major components which may be used to implement an applet server in one embodiment of the present invention;

FIG. 2a is a table which illustrates the structure of the request format data type;

US 6,976,248 B2

3

FIG. 2b is a table which illustrates the structure of the returned code data type.

FIG. 3 is a diagram showing the compilation and transformation of a program module into an applet in a particular form.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, an applet server architecture according to one embodiment of the invention is based on an applet server computer 10 which in turn is connected to client computer A 12, client computer B 14, an external network 16 and an untrusted network 18. The applet server computer 10 connects to client computers 12 and 14, an external network 16, and an untrusted network 18 by means of a network interface 20. Typically this connection will involve one or more of the computers or networks having a connection to the Internet.

The applet server computer 10 accomplishes its objectives by manipulating computer programs in several formats. An applet (e.g. applets 1-3, 25a-25c) is any form of program instructions, whether in binary, source or intermediate format. In the case of this architecture, the applet code can either be a self contained program, or it can be a code fragment associated with a larger application.

Binary format refers to processor specific machine instructions suitable for running natively on a given computing platform (also referred to as "target" because of the concept of "targeting" a compiler to produce binary code for a given processor type).

Source refers to non-binary applet code, generally in the form of higher level languages (i.e. C, C++, Java, Visual Basic, ActiveX, Fortran, and Modula).

Intermediate format refers to a common intermediate byte-code that is produced by compiling a given source code input. The intermediate byte-code need not necessarily be Java byte-code.

Treating applets in this general sense allows client computers 12 and 14 to request not only applications, but portions of applications. Client computers 12 and 14 are thus able to use applet server computer 10 as the equivalent of a loader, loading in appropriate parts of the application in the form of applets. In turn client computers 12 and 14 can run large applications without requiring that the client computers 12 and 14 have the resources to store the entire application in memory at once.

Having the applets delivered from applet server computer 10 allows code in intermediate form to be verified, optimized, and compiled before being transmitted to client computers 12 and 14. This reduces the amount of work the client computers 12 and 14 have to do and provides a convenient way to impose global restrictions on code.

In operation, client computer A 12 transmits a request to an applet server computer 10 requesting an applet in a particular form. The form may be selected from a large matrix of many possible forms that can be recognized by the system. The request specifies the format (source, intermediate, or binary) in which the client wishes to receive the applet. The request may also specify that the applet be verified or have some other transformation operation performed upon it. Verification, optimization and compression are examples of types of transformation operations. The request is received by the network interface 20 of the applet server computer 10 which passes the request onto the applet server manager 22.

4

After interpreting the request, the applet server manager 22 checks to see if the requested applet is available in the cache 24. The cache 24 stores applets in a variety of formats (source, intermediate, or binary). If the requested form of the applet is available in the cache 24 (applet 1 25a, applet 2 25b, or applet 3 25c in this example) the applet server manager 22 instructs the network interface 20 to transmit the applet to requesting client computer A 12.

If the requested applet is not available in the cache 24, then the applet server manager 22 will attempt to build the requested applet from local resources 26 and one or more transformation operations performed by one or more of the transformers 28. Local resources 26 are comprised of compilers 30a, 30b and 30c and program code modules 32a, 32b, 32c and 32d. The requested applet is built by selecting one or more program code modules 32 and compiling them with one or more compilers 30. Transformer operations may be performed by the verifier 34 or the optimizer 36. After the applet server manager 22 builds the applet, the network interface 20 transmits the applet to the requesting client computer A 12.

If the request can not be satisfied by building the applet from local resources 26 and transformers 28, the applet server manager 22 will pass a request for the requested applet to external network 16 and/or untrusted network 18. The applet server manager 22 may request the applet in intermediate form or in executable form or it may request the local resources 26 and transformers 28 it needs to complete building the applet itself.

The cache 24 is capable of responding to the following commands: GET, PUT, and FLUSH. GET is used to retrieve a given applet from the cache. PUT is used to store an applet in the cache. FLUSH is used to clear the cache of one or more entries. When the cache is unable to locate an item in response to a GET operation, it returns a cache miss. The program which issued the GET command is then responsible for locating the desired form of the applet by other means and optionally storing it in the cache when it is retrieved (using the PUT operation). The FLUSH command will clear the cache of one or more entries and any subsequent GETs for the FLUSHed applet code will result in a cache miss. This is useful if a particular applet needs to be updated from a remote server on a periodic basis. When using PUT, the program issuing the command specifies a time to live (TTL) in the cache. When the TTL expires, the cache entry is removed by means of a FLUSH operation.

Local resources 26 are comprised of program modules 32 (applets in source form, not the requested form) and compilers 30. The program modules 32 are run through the compilers 30 in order to produce applets in the requested form. The applet server manager 22 may also direct the modules 32 to be processed by a verifier 34 or another transformer such as an optimizer 36. Program modules 32 are program code used to build applets. Program modules 32 may be stored in local resources 26 in source, binary, or intermediate formats. When an applet is built it may require the operation of one or more compilers 30 upon one or more program modules 32. The program modules 32 may be combined and recompiled with previously cached applets and the resulting applet may be also cached for use at a future time. Additionally, program modules 32, compilers 30 and transformers 28 (including verifiers 34 and optimizers 36) may be distributed across a network. The applet server manager 22 may pass requests for the components it needs to build a particular applet back to the network interface 20 which in turn passes the request onto the rest of the network and may include external network 16 and untrusted network 18.

US 6,976,248 B2

5

FIG. 3 provides further illustration of how an applet is produced from local resources and transformers. In this illustration the request is for an optimized and verified applet compiled to a machine specific form. A program module 40 is compiled into an intermediate form program module 44 by an intermediate compiler 42. The intermediate form program module 44 is then transformed by an optimizer 46 or a verifier 48. The resulting transformed intermediate form program module 50 is then compiled by target compiler 52 into machine specific code applet 54.

There are two types of compilers used to build applets: intermediate compilers 42 and target compilers 52. The intermediate compiler 42 compiles program modules (source applet code) 40 and produces a common intermediate pseudo-binary representation of the source applet code (intermediate form program module 44). The word pseudo is used because the intermediate form 44 is not processor specific but is still a binary representation of the source program module 40. This intermediate form can be re-targeted and compiled for a particular processor. Alternatively, the intermediate form 44 can be interpreted by an interpreter or virtual machine that understands the internal binary representation of the intermediate form. A target compiler 52 compiles intermediate applet code 44 into an applet 54 in a processor specific format (binary) suitable for running natively on a given computing platform.

Transformers 56 are programs that take in intermediate code and put out intermediate code. Transformers 56 are generally used for things like verification and optimization. Other transformers might include compressors that identify portions of code that can be replaced with smaller equivalents. Transformers can be matched up to any other component that takes in intermediate code as an input. These include the cache 24 and the target compilers 52. Global policies for transformers 56 can be implemented which ensure that all applets are run through some set of transformers before being returned to the client.

A verifier 48 is a type of transformer that is able to analyze input code and determine areas that might not be safe. The verifier 48 can determine the level of safety. Some verifiers 48 look for areas where unsafe or protected memory is being accessed, others might look for accesses to system resources such as IO devices. Once a verifier 48 determines the portion of unsafe applet code several steps can be taken. The offending code portion can be encased with new code that specifically prevents this unsafe code section from being executed. The unsafe code can be modified to be safe. The unsafe code can be flagged in such a way that a user can be warned about the possible risks of executing the code fragment. The verifier's role can therefore be summarized as determining where unsafe code exists and possibly altering the offending code to render it harmless. Verifiers 48 can operate on any format of input code, whether in source, intermediate or binary form. However, since intermediate code is a common format, it is most efficient to have a single verifier that will operate on code in this format. This eliminates the need to build specific knowledge of various source languages into the verifier. Verifiers 48 are a form of a transformer. Verifiers 48 take in intermediate code and put out verified intermediate code. Verifiers 48 are responsible for identifying non-secure portions of code in the intermediate code and modifying this code to make it secure. Security problems generally include access to memory areas that are unsafe (such as system memory, or memory outside the application space of the applet).

The choice of adding in the verification step can be left up to the client computer 12, the applet server computer 10 (see

6

FIG. 1), or can be based on the network that the applet originated from. Server managers can institute global policies that affect all clients by forcing all applets to be run through the verifier 48. Alternatively, verification can be reserved for un-trusted networks (18 in FIG. 1), or it can be left up to the client to determine whether the verification should be performed. In the preferred embodiment, verification level is determined by the applet server 10. In this way, a uniform security policy may be implemented from a single machine (i.e., the applet server 10).

Optimizers 46 are another type of transformer program. Optimizers 46 analyze code, making improvements to well known code fragments by substituting in optimized but equivalent code fragments. Optimizers 46 take in intermediate code 44 and put out transformed intermediate code 50. The transformed intermediate code 50 is functionally equivalent to the source intermediate code 44 in that they share the same structure.

Referring again to FIG. 1, policies may be instituted on the applet server 10 that force a certain set of request parameters regardless of what the client asked for. For example, the applet server manager 22 can run the applet through a verifier 34 or optimizer 36 regardless of whether the client 12 requested this or not. Since the server 10 might have to go to an untrusted network 18 to retrieve a given applet, it will then run this applet through the required transformers 28, particularly the verifier 34 before returning it to the client 12. Since clients 12 and 14 have to go through the applet server computer 10, this ensures that clients 12 and 14 do not receive applets directly from an untrusted network 18. In addition, since the server will be dealing directly with untrusted network 18, it can be set up to institute policies based on the network. A trusted external network 16 may be treated differently than an untrusted network 18. This will provide the ability to run a verifier 34 only when dealing with an untrusted network 18, but not when dealing with a trusted external network 16. In one embodiment, all intermediate code is passed through a verifier 34 and the source of the code merely determines the level of verification applied.

The client 12 is the target computer on which the user wishes to execute an applet. The client 12 requests applets from the server 10 in a specific form. Applets can be requested in various formats including source, intermediate and binary. In addition, an applet can be requested with verification and/or other compile time operations. Optionally, the client 12 can pass a verifier to the server to provide verification. If the server 10 implements its own security, then both the client and server verifiers will be run. The verifier that is passed from the client to the server is cached at the server for subsequent verification. The client can refer to this verifier by a server-generated handle to avoid having to pass the verifier each time an applet is requested.

Client computers 12 and 14 requesting applet code in intermediate format need to have an interpreter or virtual machine capable of interpreting the binary code in the intermediate format if the applet is to be executed on the client machine.

In the preferred embodiment, requests to the applet server are in a format similar to those of an HTTP header and are comprised of tags and values. In one embodiment, an HTTP GET method is used to make the request (though use of the HTTP protocol is not necessary to implement the present invention). The request is made up of a series of tags which specify the requested applet, the platform on which it is to

US 6,976,248 B2

7

be run and the type of code (source/intermediate/binary), a verification level and an optimization level. New tags and values can be added to extend functionality as needed and the applet server manager 22 will discard any tag it does not recognize. When the applet server computer 10 returns the requested applet to the requesting client computer A 12, it will transmit the request header followed by the applet code. In this instance, the header will additionally include a field which defines the length of the applet code. FIG. 2 provides a table which illustrates the request format and the returned code format.

While this invention has been described with reference to specific embodiments, this description is not meant to limit the scope of the invention. Various modifications of the disclosed embodiments, as well as other embodiments of the invention, will be apparent to persons skilled in the art upon reference to this description. It is therefore contemplated that the appended claims will cover any such modifications or embodiments as fall within the scope of the invention.

I claim:

1. A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of the applet out of a plurality of forms of the applet, comprising:

- a) receiving on said server computer a request from a client computer for an applet in a form selected from a plurality of forms;
- b) compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form; and
- c) transmitting said applet in said selected form to said client computer.

2. The method of claim 1, further comprising the step of: copying said applet in said selected form to a local cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said selected form.

3. The method of claim 2, further comprising the step of: transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resource, and directing said external resource to transmit said applet in said selected form to said server computer.

4. The method of claim 1, further comprising the step of: transmitting a request to an external resource for supplying said applet in said selected form if said applet can not be compiled from said local resource and directing said external resource to transmit said applet in said selected form to said server computer.

5. A method operating on a computer system for managing requests to a server computer for applets in a client server environment wherein each request for an applet specifies one form of said applet out of a plurality of forms of said applet, comprising:

- a) receiving on said server computer a request from a client computer for an applet in a specified form selected from a plurality of forms;
- b) determining whether said applet is stored in said specified form in a local cache and, if so, transmitting said applet in said specified form to said client computer;

8

c) if said applet is not stored in said selected form in said local cache, compiling said applet into said selected form from a local resource comprising at least one source module and one compiler which acts on said source module to produce said selected form and transmitting said applet in said selected form to said client computer.

6. The method of claim 5, further comprising the step of: copying said applet in said selected form to said cache after compiling said applet from said local resource if said cache does not contain a copy of said applet in said form.

7. The method of claim 6, further comprising the step of: transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resource, and

directing said external resource to transmit said applet in said form to said server computer.

8. The method of claim 5, further comprising the step of: transmitting a request to an external resource for said applet in said selected form if a copy of said applet is not stored in said local cache and said applet can not be compiled from said local resources, and directing said external resource to transmit said applet in said selected form to said server computer.

9. A method operating on a computer system for generating an applet in response to a request by a client computer wherein each request for an applet specifies one form of the applet out of a plurality of forms of the applet, comprising:

- a) receiving on a server computer a request from a client computer for an applet in a form selected from a plurality of forms;
- b) compiling an applet program module into an intermediate form program module;
- c) transmitting said applet in said selected form to said client computer.

10. The method of claim 9, further comprising the step of: transforming said intermediate form program module into a transformed intermediate form program module with at least one transformer program.

11. The method of claim 10, wherein said at least one transformer program is selected from the group consisting of verifying computer programs, optimizing computer programs, compressing computer programs, debugging computer programs, usage monitoring computer programs and encrypting computer programs.

12. The method of claim 11, further comprising the step of: compiling said transformed intermediate form program module into machine specific binary code with a target compiler.

13. The method of claim 10, further comprising the step of: compiling said transformed intermediate form program module into machine specific binary code with a target compiler.

* * * * *

JURISDICTION & VENUE

6. This is an action for infringement of a United States patent, among other actions. Accordingly, this action arises under the patent laws of the United States of America, 35 U.S.C. § 1 et. seq. and jurisdiction is properly based on Title 35 United States Code, particularly § 271, and title 28 United States Code, particularly § 1338(a).

7. IBM, upon information and belief, transacts business in this judicial district by manufacturing, selling, offering to sell, or using products and/or systems as described and claimed in United States Patent Nos. 6,324,685 and 6,976,248, the patents at issue in this lawsuit, and/or by conducting other business in this judicial district.

8. Oracle, upon information and belief, transacts business in this judicial district by manufacturing, selling, offering to sell, or using products and/or systems as described and claimed in United States Patent Nos. 6,324,685 and 6,976,248, the patents at issue in this lawsuit, and/or by conducting other business in this judicial district.

9. SAP, upon information and belief, transacts business in this judicial district by manufacturing, selling, offering to sell, or using products and/or systems as described and claimed in United States Patent Nos. 6,324,685 and 6,976,248, the patents at issue in this lawsuit, and/or by conducting other business in this judicial district.

10. Adobe, upon information and belief, transacts business in this judicial district by manufacturing, selling, offering to sell, or using products and/or systems as described and claimed in United States Patent Nos. 6,324,685 and 6,976,248, the patents at issue in this lawsuit, and/or by conducting other business in this judicial district.

11. Venue is proper in this court under Title 28 United States Code § 1391(b) and 1400(b).

Plaintiff's Original Complaint

Page 3

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

COUNT I

PATENT INFRINGEMENT AGAINST ALL DEFENDANTS

12. On November 27, 2001, United States Patent No. 6,324,685 ("the '685 patent") entitled "Applet Server that Provides Applets in Various Forms" was duly and legally issued. A true and correct copy of the '685 patent is attached as Exhibit A.

13. On December 13, 2005, United States Patent No. 6,976,248 ("the '248 patent") entitled "Application Server Facilitating with Client's Computer for Applets along with Various Formats" was duly and legally issued. A true and correct copy of the '248 patent is attached as Exhibit B.

14. Pursuant to 35 U.S.C. § 282, the above-listed United States Patents are presumed valid.

15. Edward Balassanian is the sole inventor of the '685 and '248 patents. The '685 and '248 patents have been assigned to Plaintiff.

16. IBM, on information and belief, manufactures, uses, and sells products that infringe the '685 and '248 patents, including without limitation, its Websphere Application Server.

17. Oracle, on information and belief, manufactures, uses, and sells products that infringe the '685 and '248 patents, including without limitation, its Oracle Application Server and BEA WebLogic Server.

18. SAP, on information and belief, manufactures, uses, and sells products that infringe the '685 and '248 patents, including without limitation, its NetWeaver Application Server.

19. Adobe, on information and belief, manufactures, uses, and sells products that infringe the '685 and '248 patents, including without limitation, its JRun and ColdFusion products.

//

//

Plaintiff's Original Complaint

Page 4

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

1 20. The infringement of the '685 and '248 patents alleged above has injured the Plaintiff and
2 thus, it is entitled to recover damages adequate to compensate for IBM, Oracle, SAP, and
3 Adobe's infringement, which in no event can be less than a reasonable royalty.
4

5
6 **DEMAND FOR JURY TRIAL**

7 21. Plaintiff hereby demands a jury trial on all claims and issues.
8

9
10 **PRAYER FOR RELIEF**

11 Wherefore, Plaintiff prays for entry of judgment:

12 A. that Defendants IBM, Oracle, SAP, and Adobe have infringed one or more claims of
13 the '685 and '248 patents;

14 B. that Defendants IBM, Oracle, SAP, and Adobe account for and pay to Plaintiff all
15 damages caused by the infringement of the '685 and '248 patents, which by statute can be no less
16 than a reasonable royalty;
17

18 C. that Plaintiff be granted pre-judgment and post-judgment interest on the damages
19 caused to them by reason of Defendants, IBM, Oracle, SAP, and Adobe's infringement of the '685
20 and '248 patents;

21 D. that Plaintiff be granted its attorneys' fees in this action;

22 E. that costs be awarded to Plaintiff; and

23 F. that Plaintiff be granted such other and further relief as the Court may deem just and
24 proper under the current circumstances.
25

26 //

27 //

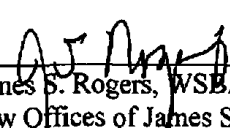
28 Plaintiff's Original Complaint

Page 5

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

1 DATED this 15 day of July, 2008. Respectfully submitted,
2
3

4 LAW OFFICES OF JAMES S. ROGERS

5
6 
James S. Rogers, WSEA # 5335
Law Offices of James S. Rogers
1500 Fourth Avenue, Suite 500
Seattle, Washington 98101
Telephone: 206/621-8525
Fax: 206/223-8224
7
8
9
10

11
12 *OF COUNSEL:*

13 Edward W. Goldstein
14 Corby R. Vowell
Matthew J.M. Prebeg
15 GOLDSTEIN, FAUCETT & PREBEG, L.L.P.
16 1177 West Loop South, Suite 400
Houston, Texas 77027
17 Telephone: 713/877-1515
Fax: 713/877-1737
18

19 *Attorneys for Plaintiff*
20
21
22
23
24
25
26
27
28

Plaintiff's Original Complaint

Page 6

LAW OFFICES OF JAMES S. ROGERS
1500 Fourth Avenue, Suite 500
Seattle WA 98101
Ph: 206/621-8525, Fax: 206/223-8224

US006324685B1

(12) **United States Patent**
Balassanian(10) Patent No.: **US 6,324,685 B1**(45) Date of Patent: ***Nov. 27, 2001**(54) **APPLET SERVER THAT PROVIDES
APPLETS IN VARIOUS FORMS**(75) Inventor: **Edward Balassanian, Kirkland, WA
(US)**(73) Assignee: **BeComm Corporation, Redmond, WA
(US)**

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/040,972**(22) Filed: **Mar. 18, 1998**(51) Int. Cl.⁷ **G06F 9/45**(52) U.S. Cl. **717/5; 717/1**(58) Field of Search **395/705, 701,
395/200.33, 200.32, 188.01; 717/5, 1; 709/203,
202; 713/202**(56) **References Cited****U.S. PATENT DOCUMENTS**

5,805,829	• 9/1998	Cohen et al.		395/200.32
5,828,840	• 10/1998	Cowan et al.		395/200.33
5,848,274	• 12/1998	Hamby et al.		395/705
5,872,915	• 2/1999	Dykes et al.		395/188.01
5,884,078	• 3/1999	Faustini		395/701

OTHER PUBLICATIONS"Eliminating Unnecessary Synchronization," <http://kimera.cs.washington.edu/synch/index.html> [Accessed Oct. 4, 2000].Sirer, Emin Gün, "Kimera Paper Trail," <http://kimera.cs.washington.edu/papers/index.html> [Accessed Oct. 4, 2000].Sirer, Emin Gün, "Java, Extensibility and Security Related Links," <http://kimera.cs.washington.edu/related/index.html> [Accessed Oct. 4, 2000].Sirer, Emin Gün, "Java-Relevant Articles in the Press," <http://kimera.cs.washington.edu/press/index.html> [Accessed Oct. 4, 2000]."Project Members" <http://kimera.cs.washington.edu/members.html> [Accessed Oct. 4, 2000].Emin Gün Sirer, et al., "Distributed Virtual Machines: A System Architecture for Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington <http://kimera.cs.washington.edu> Feb. 26, 1998.

(List continued on next page.)

Primary Examiner—Mark R. Powell

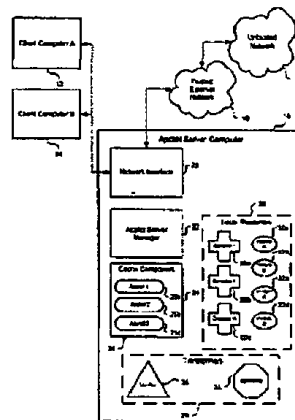
Assistant Examiner—Hoang-Vu Antony Nguyen-Ba

(74) Attorney, Agent, or Firm—Perkins Coie LLP

(57) **ABSTRACT**

The present invention is an applet server which accepts requests for applets from client computers. A request specifies the format in which an applet is to be delivered to the requesting client computer. The applet server has a cache which it uses to store applets for distribution to client computers. If the specified form of the requested applet is available in the cache, the applet server transmits the applet to the requesting client. If the applet is not available in the cache, the server will attempt to build the applet from local resources (program code modules and compilers) and transformer programs (verifiers and optimizers). If the applet server is able to build the requested applet, it will then transmit the applet to the requesting client computer. If the applet server is unable to build the requested applet, it will pass the request to another applet server on the network for fulfillment of the request.

106 Claims, 3 Drawing Sheets



PLAINTIFF'S ORIGINAL COMPLAINT
ATTACHMENT A - 7

7

US 6,324,685 B1

Page 2

OTHER PUBLICATIONS

Emin Gün Sirer, et al., "Design and Implementation of a Distributed Virtual Machine for Networked Computers," University of Washington, Department of Computer Science and Engineering, Seattle Washington, 17th ACM Symposium on Operating system Principles, Dec. 1999.
Sirer, Emin Gün, "A System Architecture for Next Generation Network Computing," Dept. of Computer Science & Engineering, University of Washington, Seattle, Washington <http://www.dyncomp-is.com/darpa/meetings/gradmeet98/Whitepapers/darpa-wp.html> Jun. 26, 1998.
Sirer, Emin Gün, <http://www.cs.washington.edu/homes/egs/> [Accessed Oct. 4, 2000].
Sirer, Emin Gün, "Kimera—A System Architecture for Networked Computers," <http://kimera.cs.washington.edu/> [Accessed Oct. 4, 2000].

Emin Gün Sirer and Brian Bershad, "Kimera Architecture," <http://kimera.cs.washington.edu/overview.html> [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Security Flaws in Java Implementations," <http://kimera.cs.washington.edu/flaws/index.html> [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera Bytecode Verification," <http://kimera.cs.washington.edu/verifier.html> [Accessed Oct. 4, 2000].

Sirer, Emin Gün, "Kimera Test Suite," <http://kimera.cs.washington.edu/testsuite.html> [Accessed Oct. 4, 2000].

Sirer, Emin, Gün, "Kimera Disassembler," <http://kimera.cs.washington.edu/disassembler.html> [Accessed Oct. 4, 2000].

* cited by examiner

AO 120 (Rev. 3/04)

TO: **Mail Stop 8**
Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

**REPORT ON THE
 FILING OR DETERMINATION OF AN
 ACTION REGARDING A PATENT OR
 TRADEMARK**

In Compliance with 35 U.S.C. §280 and/or 15 U.S.C. § 1116, you are hereby advised that a court action has been
 filed in the U.S. District Court Northern District of California on the following ☒ Patents or ☐
 Trademarks:

E-filing

DOCKET NO.	DATE FILED January 15, 2009	U.S. DISTRICT COURT Northern District of California
PLAINTIFF SUN MICROSYSTEMS INCORPORATED, a Delaware corporation		DEFENDANT IMPLICIT NETWORKS, INC., a Washington corporation
		CV 09 0201
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. 6,324,685	November 27, 2001	BeComm Corporation, Redmond, WA (US)
2. 6,976,248 B2	December 13, 2005	Implicit Networks, Inc.
3.		
4.		
5.		

JL

In the above-entitled case, the following patent(s) / trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1.			
2.			
3.			

In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION / JUDGMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1 - Upon initiation of action, mail this copy to Director
 Copy 2 - Upon filing document adding patent(s), mail this copy to Director
 Copy 3 - Upon termination of action, mail this copy to Director
 Copy 4 - Case file copy.

JAN 26 2009

TO: **Mail Stop 8**
Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

**REPORT ON THE
 FILING OR DETERMINATION OF AN
 ACTION REGARDING A PATENT OR
 TRADEMARK**

In Compliance with 35 U.S.C. §290 and/or 15 U.S.C. § 1116, you are hereby advised that a court action has been
 filed in the U.S. District Court Northern District of California on the following ☒ Patents or ☐ Trademarks:

E-filing

DOCKET NO.	DATE FILED January 15, 2009	U.S. DISTRICT COURT Northern District of California
PLAINTIFF SUN MICROSYSTEMS INCORPORATED, a Delaware corporation		DEFENDANT IMPLICIT NETWORKS, INC., a Washington corporation
CV 09 0201 JL		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. 6,324,685	November 27, 2001	BeComm Corporation, Redmond, WA (US)
2. 6,976,248 B2	December 13, 2005	Implicit Networks, Inc.
3.		
4.		
5.		

In the above-entitled case, the following patent(s) / trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1.			
2.			
3.			

In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION / JUDGMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1 - Upon initiation of action, mail this copy to Director
 Copy 2 - Upon filing document adding patent(s), mail this copy to Director
 Copy 3 - Upon termination of action, mail this copy to Director
 Copy 4 - Case file copy.

1 Katherine Kelly Lutton (CAB # 194971)

2 lutton@fr.com

3 Robert J. Kent (CAB # 250905)

4 RJKent@fr.com

5 FISH & RICHARDSON P.C.

6 500 Arguello Street, Suite 500

7 Redwood City, California 94063

8 Telephone: (650) 839-5070

9 Facsimile: (650) 839-5071

10 Attorneys for Plaintiffs

11 SUN MICROSYSTEMS INCORPORATED

12 UNITED STATES DISTRICT COURT

13 NORTHERN DISTRICT OF CALIFORNIA

14 SUN MICROSYSTEMS INCORPORATED, a
15 Delaware corporation,

16 Plaintiff,

17 v.

18 IMPLICIT NETWORKS, INC., a Washington
19 corporation,

20 Defendant.

CV 09

0201

COMPLAINT FOR DECLARATORY
JUDGMENT OF NON-INFRINGEMENT,
INVALIDITY AND
UNENFORCEABILITY

JURY TRIAL DEMANDED

21 1. Sun Microsystems Incorporated ("Sun") hereby brings this action for declaratory
22 judgment against Implicit Networks, Inc. ("Implicit"). Specifically, Sun seeks, amongst other
23 things, declaratory judgment of non-infringement, invalidity and unenforceability of U.S. Patent
24 Nos. 6,324,685 ("the '685 patent"), entitled "Applet server that provides applets in various forms,"
25 and 6,976,248 ("the '248 patent"), entitled "Application server facilitating with client's computer
26 for applets along with various formats."

27 2. Upon information and belief, Implicit is a patent holding company that makes no
28 products and whose principal and only business is licensing and enforcing patents. Implicit claims
to own the '685 and '248 patents. True and correct copies of the '685 and '248 patents are attached
as Exhibits A and B (respectively).

3. Upon information and belief, as part of its patent licensing business strategy, Implicit offers licenses to, and files patent infringement suits against, prominent high technology companies. Upon information and belief, through either these arms-length license negotiations or as a result of litigation settlements, Implicit has in fact licensed various patents to high technology companies. Such companies include two high technology corporations headquartered in this judicial district.

4. Implicit's public website consists of one page enumerating its technology that is "currently available for licensing." A true and correct copy of the website is attached as Exhibit C. At the bottom of the webpage, Implicit solicits requests for licenses over the enumerated technology, and includes an interactive link allowing website viewers throughout the country including in this judicial district to send electronic mail to Implicit.

5. On July 15, 2008, Implicit filed a lawsuit against Adobe Systems Incorporated, International Business Machines Corporation, Oracle Corporation, and SAP America, Inc. in the United States District Court for the Middle Western District of Washington, Civil Action No. C08-01080, alleging that various products and services of those respective companies infringed both the '685 and '248 patents. Implicit seeks damages.

6. On January 14, 2008, Implicit sent a letter to Sun's litigation counsel amongst others. A true and correct copy of this letter is attached as Exhibit D. In the letter, Implicit states its intention to imminently add Sun as a defendant in the aforementioned Washington litigation, or in the alternative file a new complaint against Sun.

7. As the above-stated facts indicate, Implicit has asserted rights under the '685 and '248 patents based on certain as-yet unidentified ongoing activity of Sun. Based on Implicit's expressed intention to commence litigation against Sun, an actual, substantial, and continuing justiciable controversy exists between Sun and Implicit, requiring a declaration of rights by this Court.

8. In terms of venue, Sun has its headquarters in this judicial district and conducts substantial business and maintains extensive facilities in this district. It is likely that a great deal of evidence concerning Sun's allegedly infringing conduct is located in this district. It is also likely

1 that many of the witnesses who will be asked to testify in this matter will be located in this judicial
2 district. The relevant facts are set forth below.

3 THE PARTIES

4 9. Sun is a corporation organized and existing under the laws of Delaware with its
5 corporate headquarters and principal place of business at 4150 Network Circle, Santa Clara, CA
6 95054.

7 10. Upon information and belief, Implicit is incorporated under the laws of the state of
8 Washington with a registered agent for service of process located at 701 Fifth Avenue, # 7000,
9 Seattle, Washington, 98104.

10 JURISDICTION AND VENUE

11 11. This is a declaratory judgment action brought pursuant to the Federal Declaratory
12 Judgment Act, 28 U.S.C. § 2201 et seq., for patent non-infringement, invalidity and
13 unenforceability arising under the patent laws of the United States, Title 35, United States Code.
14 This Court has subject matter jurisdiction over the causes of action stated herein pursuant to 28
15 U.S.C. §§ 1331, 1338(a) and 2201, because this action concerns a federal question arising under the
16 patent laws of the United States.

17 12. Implicit is subject to personal jurisdiction in this District because Implicit has
18 purposefully availed itself of the privilege of doing business in California, including pursuing its
19 licensing efforts directly and through its website efforts in this judicial district and actually licensing
20 its various patents to at least two entities headquartered in this judicial district. Further, upon
21 information and belief, Implicit has substantial contacts with California because of its ongoing
22 attempts to license patents to other entities in the state of California.

23 13. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391 and 1400(b) because
24 Implicit has engaged in significant activity in this district including seeking licensing arrangements
25 in this district.

26 COUNT I: NON-INFRINGEMENT OF THE '685 AND '248 PATENTS

27 14. Sun incorporates by reference and realleges paragraphs 1 through 13, above, as if
28 fully set forth herein.

1 15. The products and services provided by Sun and utilized by its customers do not
2 infringe and have not infringed, either directly, indirectly, or by equivalents, any claim of the '685
3 patent or the '248 patent.

4 **COUNT II: INVALIDITY OF THE '685 AND '248 PATENTS**

5 16. Sun incorporates by reference and realleges paragraphs 1 through 15, above, as if
6 fully set forth herein.

7 17. The claims of the '685 and '248 patents are invalid for failure to satisfy the
8 requirements of patentability specified by Title 35 of the United States Code, including §§ 101, 102,
9 103 and/or 112.

10 **COUNT III: DECLARATORY RELIEF REGARDING EQUITABLE ESTOPPEL**

11 18. Sun incorporates by reference and realleges paragraphs 1 through 17, above, as if
12 fully set forth herein.

13 19. The first of Implicit's '685 and '248 patents issued on November 27, 2001—over
14 seven years ago and more than six years before the institution of this action and Sun's first notice of
15 Implicit's claims. Since that time, Implicit has unreasonably delayed asserting its claims with
16 prejudice to Sun. During this delay, Sun relied on its detriment to Implicit's affirmative actions and
17 representations (in the claims, patent application and prosecution history) about what its patents did
18 and did not cover.

19 20. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 et seq., Sun
20 requests the declaration of the Court that the '685 and '248 patents are unenforceable by the
21 doctrine of equitable estoppel.

22 **COUNT IV: DECLARATORY RELIEF REGARDING LACHES**

23 21. Sun incorporates by reference and realleges paragraphs 1 through 20, above, as if
24 fully set forth herein.

25 22. The first of Implicit's '685 and '248 patents issued on November 27, 2001—over
26 seven years ago. Since that time, Implicit has unreasonably and inexcusably delayed bringing any
27 action and now threatens to imminently file suit.

28 ///

1 23. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 et seq., Sun
2 requests the declaration of the Court that the '685 and '248 patents are unenforceable by the
3 doctrine of laches.

4 **COUNT V: DECLARATORY RELIEF REGARDING MARKING**

5 24. Sun incorporates by reference and realleges paragraphs 1 through 23, above, as if
6 fully set forth herein.

7 25. Upon information and belief, prior to the filing of this action, Sun was not given
8 constructive notice of Implicit's claimed patent rights through marking or other appropriate means.

9 26. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 et seq., Sun
10 requests the declaration of the Court that Implicit failed to mark or otherwise provide proper notice
11 of the '685 and '248 patents pursuant to 35 U.S.C. § 287 and therefore any potential damages are
12 accordingly limited.

13 **COUNT VI: DECLARATORY RELIEF REGARDING**
14 **PROSECUTION HISTORY ESTOPPEL**

15 27. Sun incorporates by reference and realleges paragraphs 1 through 26, above, as if
16 fully set forth herein.

17 28. During prosecution of the '685 and '248 patents, Implicit made statements and
18 representations to the Patent Office, without limitation relating to the definition of the term
19 "applet," to which the applicant must now be bound. Implicit made these statements in attempt to
20 seek allowance of the patents and cannot now try to recapture that which the application gave up.

21 29. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 et seq., Sun
22 requests the declaration of the Court that Implicit is barred, under the doctrine of Prosecution
23 History Estoppel, from construing the claims of either the '685 patent or the '248 patent in such a
24 way as to cover any of Sun's products or processes.

25 **COUNT VII: EXCEPTIONAL CASE**

26 30. Sun incorporates by reference and realleges paragraphs 1 through 29, above, as if
27 fully set forth herein.

28 ///

1 31. On information and belief, prior to filing its complaint, Implicit knew, or reasonably
2 should have known, that the patent claims were invalid and/or not infringed by Sun or that its
3 claims were barred in whole or in part. Implicit's filing of the complaint and continuing to pursue
4 its present claims in view of this knowledge makes this case exceptional within the meaning of
5 35 U.S.C. § 285.

6 **COUNT VIII: DECLARATORY RELIEF REGARDING DAMAGES**

7 32. Sun incorporates by reference and realleges paragraphs 1 through 29, above, as if
8 fully set forth herein.

9 33. Upon information and belief, some of the products accused of infringing the '685 or
10 '248 patents are used by or manufactured for the United States as provided in 28 U.S.C. § 1498(a).

11 34. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 et seq., SAP
12 requests the declaration of the Court that Implicit's claims for relief and prayer for damages may be
13 limited due by 28 U.S.C. § 1498(a).

14 **PRAYER FOR RELIEF**

15 WHEREFORE, Sun prays for judgment against Implicit as follows:

16 (a) Declare that Sun's products do not infringe, either directly or indirectly, literally or
17 by equivalents, any claim of the '685 patent or the '248 patent;

18 (b) Declare that the '685 and '248 patents are invalid;

19 (c) Declare that the '685 and '248 patents are unenforceable;

20 (d) Issue an injunction preventing Implicit and those in concert with Implicit from
21 harassing Sun or Sun customers, seeking licenses from Sun or Sun customers, and accusing Sun or
22 Sun customers of infringing any claim of Implicit's '685 or '248 patents;

23 (e) Issue an Order awarding Sun its costs, expenses and reasonable attorney fees as
24 provided by law; and

25 (f) Award Sun any other and further relief as this Court may deem just and proper.

26 ///

27 ///

28 ///

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

DEMAND FOR JURY TRIAL

Plaintiff requests a trial by jury on all matters appropriately tried to a jury.

Dated: January 15, 2009

FISH & RICHARDSON P.C.

By: 
Robert J. Kent

Attorneys for Plaintiffs
SUN MICROSYSTEMS INCORPORATED

50630413.doc

AO 120 (Rev. 2/99)

TO: Mail Stop 8
 Director of the U.S. Patent & Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

**REPORT ON THE
 FILING OR DETERMINATION OF AN
 ACTION REGARDING A PATENT OR
 TRADEMARK**

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Northern District of California on the following ☒ Patents or ☐ Trademarks:

DOCKET NO. C-09-1478-EDL	DATE FILED April 3, 2009	U.S. DISTRICT COURT Office of the Clerk, 450 Golden Gate Ave., 16 th Floor, San Francisco, CA 94102
PLAINTIFF IMPLICIT NETWORKS, INC.		DEFENDANT SYBASE, INC. & MICROSOFT CORPORATION
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685		
2 6,976,248		"Pls. See Attached Copy of Complaint"
3		
4		
5		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY	☐ Amendment	☐ Answer	☐ Cross Bill	☐ Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK			
1					
2					
3					
4					
5					

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK Richard W. Wicking	(BY) DEPUTY CLERK Thelma Nudo	DATE April 3, 2009

Copy 1—Upon initiation of action, mail this copy to Commissioner Copy 3—Upon termination of action, mail this copy to Commissioner
 Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner Copy 4—Case file copy

ORIGINAL
FILED
2009 APR -3 P 3:09
RICHARD W. WIEKING
CLERK, U.S. DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

1 SPENCER HOSIE (CA Bar No. 101777)
shosie@hosielaw.com
2 BRUCE WECKER (CA Bar No. 078530)
bwecker@hosielaw.com
3 GEORGE F. BISHOP (CA Bar No. 89205)
gbishop@hosielaw.com
4 HOSIE RICE LLP
188 The Embarcadero, Suite 750
5 San Francisco, CA 94105
6 (415) 247-6000 Tel.
(415) 247-6001 Fax
7
8 EDWARD W. GOLDSTEIN
Email: egoldstein@gfpiplaw.com
9 CORBY R. VOWELL
Email: cvowell@gfpiplaw.com
10 MATTHEW J.M. PREBEG
Email: mprebeg@gfpiplaw.com
11 STEPHEN W. ABBOTT
Email: sabbott@gfpiplaw.com
12 GOLDSTEIN, FAUCETT & PREBEG, L.L.P.
1177 West Loop South, Suite 400
13 Houston, Texas 77027
14 (713) 877-1515 Tel.
(713) 877-1145 Fax
15
16 *Attorneys for Plaintiff*
IMPLICIT NETWORKS, INC.

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

21 IMPLICIT NETWORKS, INC.,
22 Plaintiff,
23
24 v.
25 SYBASE, INC., and
MICROSOFT CORPORATION,
26 Defendants.
27
28

CV 09 1478
Case No.

ORIGINAL COMPLAINT AND
DEMAND FOR JURY TRIAL

ORIGINAL COMPLAINT AND JURY DEMAND

EDL

1 Plaintiff Implicit Networks, Inc. ("Implicit" or "Plaintiff") hereby files its complaint
2 against defendants Sybase, Inc. ("Sybase") and Microsoft Corporation ("Microsoft") and
3 (collectively "Defendants"), for patent infringement. For its complaint, Plaintiff alleges, on
4 personal knowledge as to its own acts and on information and belief as to all other matters, as
5 follows:

6 **PARTIES**

7
8 1. Implicit is a corporation organized under the laws of the State of
9 Washington, with its principal place of business in Seattle, Washington.

10 2. Microsoft is a corporation organized under the laws of the State of
11 Washington, with its principal place of business in Redmond, Washington.

12 3. Sybase is a corporation organized under the laws of the State of Delaware,
13 with its principal place of business in Dublin, California.
14

15 **JURISDICTION AND VENUE**

16 4. This complaint asserts a cause of action for patent infringement under the
17 Patent Act, 35 U.S.C. § 271. This Court has subject matter jurisdiction over this matter
18 by virtue of 28 U.S.C. § 1338(a). Venue is proper in this Court by virtue of 28 U.S.C. §
19 1391(b) and (c) and 28 U.S.C. § 1400(b), in that Defendants Sybase and Microsoft may be
20 found in this district, have committed acts of infringement in this district, and a substantial
21 part of the events or omissions giving rise to the claim occurred and a substantial part of
22 property that is the subject of the action is situated in this district.
23

24 5. This Court has personal jurisdiction over defendants Sybase and Microsoft
25 because each defendant has a place of business in, and provides infringing products and
26 services in, the Northern District of California.
27
28

INTRADISTRICT ASSIGNMENT

6. Pursuant to Civil LR 3-2(c), this case should be subject to district-wide assignment because it is an Intellectual Property Action.

COUNT I

PATENT INFRINGEMENT

7. On November 27, 2001, United States Patent No. 6,324,685 ("the '685 patent") entitled "Applet Server that Provides Applets in Various Forms" was duly and legally issued. A true and correct copy of the '685 patent is attached as Exhibit A.

8. On December 13, 2005, United States Patent No. 6,976,248 ("the '248 patent") entitled "Application Server Facilitating with Client's Computer for Applets along with Various Formats" was duly and legally issued. A true and correct copy of the '248 patent is attached as Exhibit B.

9. Edward Balassanian is the sole inventor of the '685 and '248 patents. The '685 and '248 patents have been assigned to Plaintiff. Plaintiff Implicit is the sole legal and rightful owner of the '685 and '248 patents.

10. Sybase makes, uses, and sells products that infringe the '685 and '248 patents, such products including without limitation, its EAServer products. In addition, Sybase has infringed and is still infringing the '685 and '248 '289 patents in this country, through, *inter alia*, its active inducement of others to make, use, and/or sell the systems, products and methods claimed in one or more claims of the patents. In addition, Sybase has infringed and is still infringing these patents in this country through, *inter alia*, providing and selling goods and services including products designed for use in practicing one or more claims of the patents, where the goods and services constitute a material part of the invention

1 and are not staple articles of commerce, and which have no use other than infringing one or
2 more claims of the patents. Sybase has committed these acts with knowledge that the goods
3 and services it provides are specially made for use in a manner that directly infringes these
4 patents.

5 11. Microsoft makes, uses, and sells products that infringe the '685 and '248
6 patents, such products including without limitation, its Windows Server 2003 and 2008
7 products. In addition, Microsoft has infringed and is still infringing the '685 and '248
8 patents in this country, through, *inter alia*, its active inducement of others to make, use,
9 and/or sell the systems, products and methods claimed in one or more claims of the patents.
10 In addition, Microsoft has infringed and is still infringing these patents in this country
11 through, *inter alia*, providing and selling goods and services including products designed for
12 use in practicing one or more claims of the patents, where the goods and services constitute a
13 material part of the invention and are not staple articles of commerce, and which have no use
14 other than infringing one or more claims of the patents. Microsoft has committed these acts
15 with knowledge that the goods and services it provides are specially made for use in a
16 manner that directly infringes these patents.
17

18 12. As a result of the infringement by Sybase and Microsoft, Plaintiff has been
19 damaged, and will continue to be damaged, until these defendants are enjoined from further
20 acts of infringement.
21

22 13. Sybase and Microsoft will continue to infringe unless enjoined by this Court.
23 Plaintiff faces real, substantial and irreparable damage and injury of a continuing nature from
24 infringement for which Plaintiff has no adequate remedy at law.
25

26 WHEREFORE, Plaintiff prays for entry of judgment:

27 A. that the '685 and '248 patents are valid and enforceable;
28

1 B. that Sybase and Microsoft have each infringed one or more claims of the
2 '685 and '248 patents;

3 C. that Sybase and Microsoft account for and pay to Plaintiff all damages
4 caused by the infringement of the '685 and '248 patents, which by statute can be no less
5 than a reasonable royalty;

6 D. that Plaintiff be granted pre-judgment and post-judgment interest on the
7 damages caused to them by reason of Defendants' infringement of the '685 and '248
8 patents;

9 E. that this Court issue a preliminary and final injunction enjoining
10 Defendants, their officers, agents, servants, employees and attorneys, and any other
11 person in active concert or participation with them, from continuing the acts herein
12 complained of, and more particularly, that Defendants and such other persons be
13 permanently enjoined and restrained from further infringing the '685 and '248 patents;

14 F. that this Court require Defendants to file with this Court, within thirty (30)
15 days after entry of final judgment, a written statement under oath setting forth in detail
16 the manner in which Defendants have complied with the injunction;

17 G. that this be adjudged an exceptional case and the Plaintiff be awarded its
18 attorney's fees in this action pursuant to 35 U.S.C. § 285;

19 H. that this Court award Plaintiff its costs and disbursements in this civil
20 action, including reasonable attorney's fees; and

21 I. that Plaintiff be granted such other and further relief as the Court may
22 deem just and proper under the current circumstances.
23
24
25
26
27
28

1 Dated: April __, 2009

Respectfully submitted,

SPENCER HOSIE (CA Bar No. 101777)
shosie@hosielaw.com
BRUCE WECKER (CA Bar No. 078530)
bwecker@hosielaw.com
GEORGE F. BISHOP (CA Bar No. 89205)
gbishop@hosielaw.com
HOSIE RICE LLP
188 The Embarcadero, Suite 750
San Francisco, CA 94105
(415) 247-6000 Tel.
(415) 247-6001 Fax

EDWARD W. GOLDSTEIN
Email: egoldstein@gfpiplaw.com
CORBY R. VOWELL
Email: cvowell@gfpiplaw.com
MATTHEW J.M. PREBEG
Email: mprebeg@gfpiplaw.com
STEPHEN W. ABBOTT
Email: sabbott@gfpiplaw.com
GOLDSTEIN, FAUCETT & PREBEG, L.L.P.
1177 West Loop South, Suite 400
Houston, Texas 77027
(713) 877-1515 Tel.
(713) 877-1145 Fax

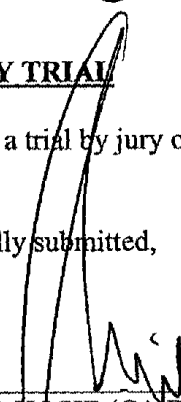
Attorneys for Plaintiff
IMPLICIT NETWORKS, INC.

DEMAND FOR JURY TRIAL

Plaintiff, by its undersigned attorneys, demands a trial by jury on all issues so triable.

Dated: April 2, 2009

Respectfully submitted,


SPENCER HOSIE (CA Bar No. 101777)
shosie@hosielaw.com
BRUCE WECKER (CA Bar No. 078530)
bwecker@hosielaw.com
GEORGE F. BISHOP (CA Bar No. 89205)
gbishop@hosielaw.com
HOSIE RICE LLP
188 The Embarcadero, Suite 750
San Francisco, CA 94105
(415) 247-6000 Tel.
(415) 247-6001 Fax

EDWARD W. GOLDSTEIN
Email: egoldstein@gfpiplaw.com
CORBY R. VOWELL
Email: cvowell@gfpiplaw.com
MATTHEW J.M. PREBEG
Email: mprebeg@gfpiplaw.com
STEPHEN W. ABBOTT
Email: sabbott@gfpiplaw.com
GOLDSTEIN, FAUCETT & PREBEG, L.L.P.
1177 West Loop South, Suite 400
Houston, Texas 77027
(713) 877-1515 Tel.
(713) 877-1145 Fax

Attorneys for Plaintiff
IMPLICIT NETWORKS, INC.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number: 22504

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☐ The address associated with Customer Number:

OR

☒ Firm or Individual Name	Implicit Networks, Inc. - Intellectual Property Department		
Address	218 Main Street, Suite 498		
City	Kirkland	State	WA Zip 98033
Country	US		
Telephone	425-503-5044	Email	docketing@implicitnetworks.com

Assignee Name and Address:

Implicit Networks, Inc.
218 Main Street, Suite 498
Kirkland, WA 98033

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record
The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	7-23-2009
Name	Jason Smith	Telephone	425-503-5044
Title	Authorized Person for Implicit Networks, Inc.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Implicit Networks, Inc.

Application No./Patent No.: 09/968,704

Filed/Issue Date: 01-Oct-2001

Titled: APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS

Implicit Networks, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: BALASSANIAN, EDWARD To: BECOMM CORPORATION

The document was recorded in the United States Patent and Trademark Office at
Reel 012264, Frame 0008, or for which a copy thereof is attached.

2. From: BECOMM CORPORATION To: IMPLICIT NETWORKS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 015748, Frame 0521, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Michael J. Donohue, Reg No. 35859/

July 27, 2009

Signature

Date

Michael J. Donohue, Reg No. 35859

Attorney of record

Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	5774413
Application Number:	09968704
International Application Number:	
Confirmation Number:	2481
Title of Invention:	APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	25096
Filer:	Michael J. Donohue/Selah Brown
Filer Authorized By:	Michael J. Donohue
Attorney Docket Number:	294518002US1
Receipt Date:	27-JUL-2009
Filing Date:	01-OCT-2001
Time Stamp:	15:15:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA.pdf	109827 6af103c8c0da16619d34a7735338adb655ae5abb	no	1

Warnings:

Information:

2	Assignee showing of ownership per 37 CFR 3.73(b).	005US1.pdf	6428 eab15ce78b00b688b382c9149720ae0cb1f7cd76	no	1
Warnings:					
Information:					
Total Files Size (in bytes):				116255	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1459
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	294518002US1

CONFIRMATION NO. 2481

POWER OF ATTORNEY NOTICE



25096
PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

Date Mailed: 08/03/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/27/2009.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	294518002US1

CONFIRMATION NO. 2481

POA ACCEPTANCE LETTER

Implicit Networks, Inc.
Intellectual Property Department
Suite 498
218 Main Street
Kirkland, WA 98033



Date Mailed: 08/03/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/27/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Implicit Networks, Inc.

Application No./Patent No.: 6,976,248

Filed/Issue Date: December 13, 2005

Entitled: Applet Server Facilitating With Client's Computer for Applets Along With Various Formats

Implicit Networks, Inc., a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____ %)

in the patent application/patent identified above by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Edward Balassanian To: Becomm Corporation

The document was recorded in the United States Patent and Trademark Office at
Reel 012264, Frame 0008, or for which a copy thereof is attached.

2. From: Becomm Corporation To: Implicit Networks, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 015765, Frame 0534, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Kenneth M. Kaslow/

Signature

February , 2010

Date

Kenneth M. Kaslow, Reg. No. 32,246

Printed or Typed Name

650-305-3050

Telephone Number

Attorney

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:



Practitioners associated with the Customer Number:

80641

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

80641

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

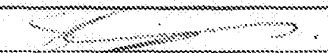
Assignee Name and Address:

Implicit Networks, Inc.
218 Main Street, Suite 408
Kirkland, WA 98033

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/56 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	2/25/10
Name	Edward Balassanian	Telephone	206-390-1946
Title	President & CEO		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	7104363
Application Number:	09968704
International Application Number:	
Confirmation Number:	2481
Title of Invention:	APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLETS ALONG WITH VARIOUS FORMATS
First Named Inventor/Applicant Name:	Edward Balassanian
Correspondence Address:	Implicit Networks, Inc. Intellectual Property Department Suite 498 218 Main Street Kirkland WA 98033 US 4255035044 docketing@implicitnetworks.com
Filer:	Kenneth M. Kaslow
Filer Authorized By:	
Attorney Docket Number:	294518002US1
Receipt Date:	28-FEB-2010
Filing Date:	01-OCT-2001
Time Stamp:	00:12:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

--

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	PA1044US_373b.pdf	184245 51c77473724cbda02ce09e4dbd6c558c1b245545	no	2
Warnings:					
Information:					
2	Power of Attorney	Implicit_Networks_POA.pdf	1326635 2c7207c0a478783a5398e02c556b710cd2e8795	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			1510880		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	294518002US1

CONFIRMATION NO. 2481

POA ACCEPTANCE LETTER

80641
Gard and Kaslow LLP
One 1st Street, Suite 9
Los Altos, CA 94022



Date Mailed: 03/08/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/28/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/atesfai/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1459
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	294518002US1

Implicit Networks, Inc.
Intellectual Property Department
Suite 498
218 Main Street
Kirkland, WA 98033

CONFIRMATION NO. 2481
POWER OF ATTORNEY NOTICE



Date Mailed: 03/08/2010

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/28/2010.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/atesfai/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

AO 120 (Rev. 2/99)

TO: Mail Stop 8 Director of the U.S. Patent & Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Northern District California on the ☒ Patents or ☐ Trademarks:

DOCKET NO. CV 10-03746 JCS	DATE FILED 8/23/2010	U.S. DISTRICT COURT 450 Golden Gate Avenue, 16th Floor, San Francisco CA 94102
PLAINTIFF IMPLICIT NETWORKS INC		DEFENDANT HEWLETT-PACKARD COMPANY
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6629163		***See Attach Complaint***
2 6324685		
3 6976248		
4 7774740		
5		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Richard W. Wieking	(BY) DEPUTY CLERK Gina Agustine-Rivas	DATE August 24, 2010
------------------------------------	---	--------------------------------

Copy 1—Upon initiation of action, mail this copy to Commissioner Copy 3—Upon termination of action, mail this copy to Commissioner
Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner Copy 4—Case file copy

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number:

55959

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer Number:

55959

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

Assignee Name and Address:
Implicit Networks
218 Main Street, Suite 494
Kirkland, WA 98033

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	May 19, 2011
Name	Edward Balassanian	Telephone	206-390-1946
Title	President & CEO		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Implicit Networks, Inc.

Application No./Patent No.: 6,976,248

Filed/Issue Date: December 13, 2005

Titled: APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLETS ALONG WITH VARIOUS FORMATS

Implicit Networks, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Edward Balassanian To: Becomm Corporation

The document was recorded in the United States Patent and Trademark Office at
Reel 012264, Frame 0008, or for which a copy thereof is attached.

2. From: Becomm Corporation To: Implicit Networks, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 015765, Frame 0534, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Randall Moeller/

Signature

May 20, 2011

Date

Randall Moeller, Reg. No. 39,776

Printed or Typed Name

Attorney

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	10139965
Application Number:	09968704
International Application Number:	
Confirmation Number:	2481
Title of Invention:	APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	80641
Filer:	Randall H. Moeller/Michael Spain
Filer Authorized By:	Randall H. Moeller
Attorney Docket Number:	PA1044US
Receipt Date:	20-MAY-2011
Filing Date:	01-OCT-2001
Time Stamp:	17:27:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA_as_filed_2011-05-20.pdf	394490 42aade40cd77692ab22f7ebbcd520a8747a921b	no	4

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	PA1044US

80641
Gard and Kaslow LLP
4 Main Street, Suite 120
Los Altos, CA 94022

CONFIRMATION NO. 2481
POWER OF ATTORNEY NOTICE



Date Mailed: 05/27/2011

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/20/2011.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/tkim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	PA1044US

CONFIRMATION NO. 2481

POA ACCEPTANCE LETTER

55959
NEWMAN & NEWMAN, ATTORNEYS AT LAW, LLP
505 FIFTH AVENUE SOUTH
SUITE 610
SEATTLE, WA 98104



Date Mailed: 05/27/2011

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/20/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/tkim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B or equivalent) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5. If the Power of Attorney by Applicant form is not accompanied by this transmittal form or an equivalent, the Power of Attorney will not be recognized in the application.

Application Number	09/968,704
Filing Date	10-01-2001
First Named Inventor	Edward Balassanian
Title	APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLETS ALONG WITH VARIOUS FORMATS
Art Unit	2193
Examiner Name	KHATRI, ANIL
Attorney Docket Number	6743-00301

SIGNATURE of Applicant or Patent Practitioner

Signature	/Dean M. Munyon/	Date	2013-04-04
Name	Dean M. Munyon	Telephone	512-853-8800
Registration Number	42914		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

- ☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

35690

OR

- ☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

Name	Registration Number		Name	Registration Number

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

- ☒ The address associated with the above-mentioned Customer Number.

OR

- ☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name				
Address				
City		State		Zip
Country				
Telephone		Email		

I am the Applicant:

- ☐ Inventor or Joint Inventor
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document)

SIGNATURE of Applicant for Patent

Signature		Date	3/29/13
Name	Edward Balassanian	Telephone	
Title and Company	President & CEO, implicit Networks, Inc.		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms for more than one signature, see below *.

- ☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	15435966
Application Number:	09968704
International Application Number:	
Confirmation Number:	2481
Title of Invention:	APPLICATION SERVER FACILITATING WITH CLIENT'S COMPUTER FOR APPLET'S ALONG WITH VARIOUS FORMATS
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	55959
Filer:	Dean M. Munyon/Danielle Kramer
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	PA1044US
Receipt Date:	04-APR-2013
Filing Date:	01-OCT-2001
Time Stamp:	16:10:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA.pdf	70137 3e690f890bfca6822dbe390010599a906aa5b06e	no	3

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	6743-00301

CONFIRMATION NO. 2481

POA ACCEPTANCE LETTER

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398



Date Mailed: 05/22/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/04/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/pasmall/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/968,704	10/01/2001	Edward Balassanian	6743-00301

55959
Newman Du Wors LLP
1201 Third Avenue, Suite 1600
SEATTLE, WA 98101

CONFIRMATION NO. 2481
POWER OF ATTORNEY NOTICE



Date Mailed: 05/22/2013

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/04/2013.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/pasmall/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
09/968,704	6976248	2193	9200



0000000070772364

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 126601 on 09/15/2014

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 126601 is:

126601
MHKKG (Implicit/BeLabs)
P.O. Box 398
Austin, TX 78767-0398

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the Western District of Texas _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:22-cv-364	DATE FILED 4/11/2022	U.S. DISTRICT COURT for the Western District of Texas
PLAINTIFF IMPLICIT, LLC		DEPENDANT SALESFORCE.COM, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 7,774,740	8/10/2010	Implicit, LLC
2 US 8,056,075	11/8/2011	Implicit, LLC
3 US 6,976,248	12/13/2005	Implicit, LLC
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the Western District of Texas _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:22-cv-686	DATE FILED 6/27/2022	U.S. DISTRICT COURT for the Western District of Texas
PLAINTIFF IMPLICIT, LLC		DEPENDANT PayPal Holdings, Inc; PayPal, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 7,774,740	8/10/2010	Implicit, LLC
2 US 8,056,075	11/8/2011	Implicit, LLC
3 US 6,976,248	12/13/2005	Implicit, LLC
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy