

## DATA STREAMING FOR INTERACTIVE DECISION-ORIENTED SOFTWARE APPLICATIONS

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority benefit from U.S. Provisional Patent Application No. 61/311,793, filed March 9, 2010, the disclosure of which is incorporated herein by reference in its entirety.

### FIELD OF THE INVENTION

The present invention relates to data streaming in general, and more particularly to data streaming for interactive, decision-oriented software applications.

### BACKGROUND OF THE INVENTION

Current data streaming methods enable a computer user to view or listen to a portion of video or music data file while downloading subsequent portions of file. However, existing streaming methods cannot be used to download an interactive software application, such as a computer game, where the entire application must be downloaded to the user's computer before the game can be played.

### SUMMARY OF THE INVENTION

In a first aspect of the invention, there is provided a method for providing data to a computer software application, the method comprising: intercepting a request made by a computer software application to retrieve a first data set from a first data storage location; determining whether there exists a first record that refers to the first data set specified in the request, wherein the first record is among a plurality of records that are defined in advance of the request; determining whether there exists an association between the first record and a predefined rule, wherein the association is defined in advance of the request, wherein the rule is among a plurality of rules that are defined in advance of the request, wherein the rule indicates that the first data set referred to in the first record and a second data set referred to in a second record are to be retrieved, wherein the rule includes

references to the first record and the second record in advance of application of the rule, and wherein the second record is among the plurality of records that are defined in advance of the request; retrieving, in accordance with the rule, the first data set from a data storage location other than the first data storage location; and retrieving, in accordance with the rule, the second data set from a data storage location other than the first data storage location in advance of a request by the computer software application to access the second data set at the first data storage location.

Herein disclosed is~~In one aspect of the invention a method is provided~~ for providing data to a computer software application, the method including intercepting a request made by a computer software application to retrieve a first data set from a first data storage location, accessing a record, defined in advance of the request, that includes a reference to the first data set and a reference to a second data set, retrieving the first data set from a data storage location other than the first data storage location, and retrieving the second data set from a data storage location other than the first data storage location in advance of a request by the computer software application to access the second data set at the first data storage location.

~~In another aspect of the invention~~an embodiment, the intercepting includes preventing an operating system of a computer that is executing the computer software application from attending to the request.

~~In another aspect of the invention~~an embodiment, the retrieving of the first data set is performed if the first data set is not available to be retrieved from the first data storage location.

~~In another aspect of the invention~~an embodiment, the method further includes storing at the first data storage location any of the data sets retrieved from any location other than the first data storage location.

~~In another aspect of the invention~~an embodiment, the method further includes allowing an operating system of a computer that is executing the computer software application to attend to the request if the first data set is available to be retrieved from the first data storage location.

~~In another aspect of the invention~~an embodiment, any of the retrieving steps are performed in accordance with a predefined rule associated with the record.

~~In another aspect of the invention~~an embodiment, the rule indicates that a first portion of a selected one of the data sets is to be retrieved, and that a second portion of the selected one of the data sets is to be retrieved only after the computer software application has received the first portion.

~~In another aspect of the invention~~an embodiment, the rule indicates preventing an operating system of a computer that is executing the computer software application from attending to the request prior to retrieving the first data set from the data storage location other than the first data storage location, and allowing the operating system to attend to the request subsequent to retrieving the second data set from the data storage location other than the first data storage location.

In a second aspect of the invention, there is provided a system for providing data to a computer software application, the system comprising: an interceptor configured to intercept a request made by a computer software application to retrieve a first data set from a first data storage location; and a manager configured to determine whether there exists a first record that refers to the first data set specified in the request, wherein the first record is among a plurality of records that are defined in advance of the request, and

determine whether there exists an association between the first record and a predefined rule, wherein the association is defined in advance of the request, wherein the rule is among a plurality of rules that are defined in advance of the request, wherein the rule indicates that the first data set referred to in the first record and a second data set referred to in a second record are to be retrieved, wherein the rule includes references to the first record and the second record in advance of application of the rule, and wherein the second record is among the plurality of records that are defined in advance of the request, retrieve, in accordance with the rule, the first data set from a data storage location other than the first data storage location, and retrieve, in accordance with the rule, the second data set from a data storage location other than the first data storage location in advance of a request by the computer software application to access the second data set at the first data storage location.

Herein disclosed is~~In another aspect of the invention a system is provided for~~ providing data to a computer software application, the system including an interceptor configured to intercept a request made by a computer software application to retrieve a first data set from a first data storage location, and a manager configured to access a record, defined in advance of the request, that includes a reference to the first data set and a reference to a second data set, retrieve the first data set from a data storage location other than the first data storage location, and retrieve the second data set from a data storage location other than the first

data storage location in advance of a request by the computer software application to access the second data set at the first data storage location.

~~In another aspect of the invention~~an embodiment, the interceptor is configured to prevent an operating system of a computer that is executing the computer software application from attending to the request.

~~In another aspect of the invention~~an embodiment, the manager is configured to retrieve the first data set if the first data set is not available to be retrieved from the first data storage location.

~~In another aspect of the invention~~an embodiment, the manager is configured to store at the first data storage location any of the data sets retrieved from any location other than the first data storage location.

~~In another aspect of the invention~~an embodiment, the interceptor is configured to allow an operating system of a computer that is executing the computer software application to attend to the request if the first data set is available to be retrieved from the first data storage location.

~~In another aspect of the invention~~an embodiment, the manager is configured to retrieve any of the data sets in accordance with a predefined rule associated with the record.

~~In another aspect of the invention~~an embodiment, the rule indicates that a first portion of a selected one of the data sets is to be retrieved, and that a second portion of the selected one of the data sets is to be retrieved only after the computer software application has received the first portion.

~~In another aspect of the invention~~an embodiment, the rule indicates that an operating system of a computer that is executing the computer software application is to be prevented from attending to the request prior to retrieving the first data set from the data storage location other than the first data storage location, and that the operating system is to be allowed to attend to the request subsequent to retrieving the second data set from the data storage location other than the first data storage location.

~~Herein disclosed is~~In another aspect of the invention a method is provided for preparing a software application for execution by a computer, the method including creating a set of core files including a plurality of computer files associated with a computer software application, executing the computer software application on a computer by executing any of the core files, recording requests made by the computer software application for data

from a set of data files associated with the computer software application, defining blocks of references to data in the set of data files including any of the recorded requests for data, defining rules for controlling the retrieval of data referred to by any of the blocks, and associating the rules with any of the blocks.

~~In another aspect of the invention~~an embodiment, the method further includes adding to the set of core files any computer file associated with the computer software application that is required for stable execution of the computer software application.

~~In another aspect of the invention~~an embodiment, the adding is performed if the execution of the computer software application fails.

~~In another aspect of the invention~~an embodiment, the creating includes including in the core set of files any computer files associated with the computer software application that provide processing logic for the computer software application.

## BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appended drawings in which:

Fig. 1A is a simplified conceptual illustration of a system for managing the execution of a software application, constructed and operative in accordance with an embodiment of the invention;

Fig. 1B is a simplified conceptual illustration of an implementation of manager 100 of Fig. 1A, constructed and operative in accordance with an embodiment of the invention;

Figs. 2A and 2B, taken together, is a simplified flowchart illustration of an exemplary method of operation of the system of Figs. 1A and 1B, operative in accordance with an embodiment of the invention;

Figs. 3A and 3B, taken together, provide a simplified conceptual illustration of a system for preparing a software application for execution by a computer, constructed and operative in accordance with an embodiment of the invention; and

Fig. 4 is a simplified flowchart illustration of an exemplary method of operation of the system of Figs. 3A and 3B, operative in accordance with an embodiment of the invention.

9. A system for providing data to a computer software application, the system comprising:

an interceptor configured to intercept a request made by a computer software application to retrieve a first data set from a first data storage location; and

a manager configured to

determine whether there exists a first record that refers to the first data set specified in the request, wherein the first record is among a plurality of records that are defined in advance of the request, and

determine whether there exists an association between the first record and a predefined rule,

wherein the association is defined in advance of the request,

wherein the rule is among a plurality of rules that are defined in advance of the request,

wherein the rule indicates that the first data set referred to in the first record and a second data set referred to in a second record are to be retrieved,

wherein the rule includes references to the first record and the second record in advance of application of the rule, and

wherein the second record is among the plurality of records that are defined in advance of the request,

retrieve, in accordance with the rule, the first data set from a data storage location other than the first data storage location, and

retrieve, in accordance with the rule, the second data set from a data storage location other than the first data storage location in advance of a request by the computer software application to access the second data set at the first data storage location.

10. The system according to claim 9 where the interceptor is configured to prevent an operating system of a computer that is executing the computer software application from attending to the request.