

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AMOD DANI and ASANG DANI

Appeal 2008-0023
Application 10/259,336
Technology Center 2100

Decided: May 30, 2008

Before JAMES D. THOMAS, LANCE LEONARD BARRY, and
HOWARD B. BLANKENSHIP, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1, 2, 4, 6-11, 13-17, 19, and 21-28, which are all the claims remaining in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Claim 1 is illustrative.

1. A method of balancing network traffic in a network comprising a plurality of switches comprising end node ports coupled by peripheral links to end node devices, the method including:

(a) retrieving default cost values associated with said end node ports;

(b) modifying said default cost values using volumes of network traffic on said end node ports to produce effective cost values associated with each of said end node ports; and

(c) balancing network traffic among said end node ports using said effective cost values.

The Examiner relies on the following reference as evidence of unpatentability.

Masters

US 5,872,930

Feb. 16, 1999

Claims 1, 2, 4, 6-11, 13-17, 19, and 21-28 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Masters.

Masters describes a load balancing technique whereby an administrator can distribute message traffic across multiple communication paths by preassigning a cost value to each of the potentially available paths. Masters col. 4, ll. 28-34. Once the cost values have been assigned, a corresponding “probability of usage” is calculated. A higher probability of usage means that a communication path has a greater “weight,” thus more likely to be chosen. Col. 7, l. 14 - col. 8, l. 2. When a message is to be sent, a random number may be generated and normalized to fall within the range of a logical weight table (Figs. 10, 12) so as to choose a path. Col. 13, l. 58 -

col. 14, l. 20; *see also* col. 2, ll. 18-34 and 42-58. Due to this “probabilistic” usage, the actual relative frequency of use for each message route converges toward the desired relative frequency of use for each message route as the cumulative number of transmissions from one site to another site increases. Col. 2, ll. 49-58; col. 16, ll. 12-19 (Masters’ claim 12).

According to Appellants, Masters’ “probability of usage” calculations are based on cost, not actual or predicted traffic. The probability of usage for each route is calculated using only the cost values for that route. Appellants argue that, as a consequence, Masters does not disclose, as set forth in instant claim 1, retrieving default cost values associated with the end node ports and modifying the default cost values using “volumes of network traffic.”

We agree with the Examiner (Ans. 5) that the “probability of usage” calculations in Masters (col. 7) are based on the cost values for more than one route. We do not, however, find support for the Examiner’s view that the traffic volume in Masters “must be observed, feed [sic; fed?] back, and used to adjust the system in achieving load balancing.” (Ans. 6.) Further, while we might assume that “any probabilistic measurement must be associated with actual sampling” (*id.*), Masters does not appear to describe “probabilistic measurement.” Masters provides an *a priori* calculation for a route using statistical weighting factors based on the relative cost of the route. The costs are assigned by an administrator. The costs are based on predicted or desired network traffic (e.g., col. 5, l. 54 - col. 6, l. 15), but not on the volume of network traffic.

We do not find any description in Masters of retrieving default cost values and modifying the default cost values using volumes of network

traffic, as required by instant claim 1. Although the rejection of claim 1 does not appear to refer to column 7, lines 6 through 13 of Masters, the reference there discloses that the cost values “conceivably could be automatically altered by a software process to adapt to changing network conditions.” The disclosure could refer to, for example, changes in network resources (e.g., the upgrade or addition of a server), rather than to monitoring of network traffic as a basis for the “automatic” altering of cost values.

“Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention.” *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984). We agree with Appellants that Masters does not provide sufficient support for the Examiner’s finding of anticipation with respect to claim 1.

Independent claim 6 requires, *inter alia*, cost values programmed based on the volume of network traffic on peripheral links. Independent claim 8 requires assigning end node ports to ports connected to the inter-switch links based on traffic volume on the peripheral links. Independent claim 9 recites that the CPU modifies the default costs using weight values to produce effective costs that are used to balance network traffic loads associated with end node ports, the weight values determined from an amount of network traffic through the end node ports. Independent claim 14 requires, *inter alia*, each end node port having an associated cost that is programmed commensurate with the volume of network traffic on the link. Independent claim 16 requires means for modifying default cost values using volumes of network traffic on peripheral links. Independent claim 21

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recites cost values programmed as a function of the volume of network traffic on peripheral links.

Taking independent claim 6 as an example, the claim does not recite cost values programmed based on “the desired volume,” or “the predicted volume,” of network traffic, which Masters may be considered to describe. In our view, “volume” means “volume” -- or, if an adjective is needed, “actual” volume. We find that none of the independent claims in the application have been shown to be anticipated by Masters.

We thus cannot sustain the rejection of any claim under 35 U.S.C. § 102(b) as being anticipated by Masters.

CONCLUSION

The rejection of claims 1, 2, 4, 6-11, 13-17, 19, and 21-28 under 35 U.S.C. § 102(b) as being anticipated by Masters is reversed.

REVERSED

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