UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NOKIA CORP. AND NOKIA OF AMERICA CORP. Petitioners

V.

PACKET INTELLIGENCE LLC, Patent Owner

Case: IPR2019-01292

U.S. Patent No. 6,771,646

PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. §311-319 AND 37 C.F.R. §42

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| A | A. Prior Art | | | |
| | 1. Riddle | | | |
| | a) Summary of the Problem and Solution | | | |
| | b) The Operation of Riddle | | | |
| | 2. Wakeman | | | |
| | 3. Cheriton | | | |



| | 4. | Bruins 27 |
|----|---------|--|
| | 5. | RFC 1945 - Hypertext Transfer Protocol HTTP/1.028 |
| B. | Count 1 | : Riddle in View of Wakeman and Bruins Renders Claims 1, 2, |
| | | nd 18 as Obvious; and Riddle in View of Wakeman, Cheriton, |
| | | ins Renders Claim 7 as Obvious |
| | 1. | Claim 1 |
| | a) | Limitation [1 Pre] "A packet monitor for examining packet |
| | , | passing through a connection point on a computer network, |
| | | each packet conforming to one or more protocols, the monitor |
| | | comprising:" |
| | b) | Limitation [1a] "(a) a packet acquisition device coupled to the |
| | , | connection point and configured to receive packets passing |
| | | through the connection point;"33 |
| | c) | Limitation [1b] "(b) a memory for storing a database |
| | | comprising flow-entries for previously encountered |
| | | conversational flows to which a received packet may belong, a |
| | | conversational flow being an exchange of one or more packets |
| | | in any direction as a result of an activity corresponding to the |
| | | flow;"34 |
| | d) | Limitation [1c] "(c) a cache subsystem coupled to the flow- |
| | | entry database memory providing for fast access of flow- |
| | | entries from the flow-entry database;" |
| | e) | Limitation [1d] "(d) a lookup engine coupled to the packet |
| | | acquisition device and to the cache subsystem and configured |
| | | to lookup whether a received packet belongs to a flow-entry in |
| | | the flow-entry database, the looking up being via the cache |
| | 0 | subsystem; and" |
| | f) | Limitation [1e] "(e) a state processor coupled to the lookup |
| | | engine and to the flow-entry-database memory, the state |
| | | processor being to perform any state operations specified for |
| | | the state of the flow starting from the last encountered state of |
| | | the flow in the case that the packet is from an existing flow, |
| | | and to perform any state operations required for the initial state |
| | | of the new flow in the case that the packet is not from an |
| | 2 | existing flow." |
| | 2. | |
| | a) | Limitation [2] "A packet monitor according to claim 1, further |
| | | comprising: a parser subsystem coupled to the packet |
| | | acquisition device and to the lookup engine such that the acquisition device is coupled to the lookup engine via the |
| | | acquistion device is coupled to the lookup engine via the |



| | parser subsystem, the parser subsystem configured to extract |
|----|---|
| | identifying information from a received packet,"49 |
| b) | Limitation [2b] "wherein each flow-entry is identified by |
| | identifying information stored in the flow-entry, and wherein |
| | the cache lookup uses a function of the extracted identifying |
| | information."50 |
| 3. | Claim 351 |
| a) | Limitation [3] "A packet monitor according to claim 2, |
| | wherein the cache subsystem is an associative cache subsystem |
| | including one or more content addressable memory cells |
| | (CAMs)."51 |
| 4. | Claim 7 |
| a) | Limitation [7 Pre] "A packet monitor for examining packets |
| | passing through a connection point on a computer network, |
| | each packet conforming to one or more protocols, the monitor |
| | comprising:"52 |
| b) | Limitation [7a] "a packet acquisition device coupled to the |
| | connection point and configured to receive packets passing |
| | through the connection point;"52 |
| c) | Limitation [7b] "an input buffer memory coupled to and |
| | configured to accept a packet from the packet acquisition |
| | device;" |
| d) | Limitation [7c] "a parser subsystem coupled to the input buffer |
| | memory, the parsing subsystem configured to extract selected |
| | portions of the accepted packet and to output a parser record |
| | containing the selected portions;"54 |
| e) | Limitation [7d] "a memory for storing a database of one or |
| | more flow-entries for any previously encountered |
| | conversational flows, each flow-entry identified by identifying |
| | information stored in the flow-entry;"56 |
| f) | Limitation [7e] "a lookup engine coupled to the output of the |
| | parser subsystem and to the flow-entry memory and configured |
| | to lookup whether the particular packet whose parser record is |
| | output by the parser subsystem has a matching flow-entry, the |
| | looking up using at least some of the selected packet portions |
| | and determining if the packet is of an existing flow;"57 |
| g) | Limitation [7f] "a cache subsystem coupled to and between the |
| | lookup engine and the flow-entry database memory providing |
| | for fast access of a set of likely-to-be-accessed flow-entries |
| | from the flow-entry database: and" |



| h) | Limitation [7g] "a flow insertion engine coupled to the flow- entry memory and to the lookup engine and configured to |
|---------|--|
| | create a flow-entry in the flow-entry database, the flow-entry |
| | including identifying information for future packets to be |
| | |
| :7 | \mathcal{I} |
| i) | Limitation [7h] "the lookup engine configured such that if the |
| | packet is of an existing flow, the monitor classifies the packet |
| :) | as belonging to the found existing flow; and" |
| j) | , |
| | insertion engine stores a new flow-entry for the new flow in |
| | the flow-entry database, including identifying information for |
| 1-) | future packets to be identified with the new flow-entry,"63 |
| k) | Limitation [7j] "wherein the operation of the parser subsystem |
| | depends on one or more of the protocols to which the packet |
| - | conforms." |
|).) | Limitation [16 Pre] "A method of examining packets passing |
| a) | through a connection point on a computer network, each |
| | packets conforming to one or more protocols, the method |
| | comprising:"64 |
| b) | Limitation [16a] "(a) receiving a packet from a packet |
| U) | acquisition device; |
| c) | Limitation [16b] "(b) performing one or more |
| C) | parsing/extraction operations on the packet to create a parser |
| | record comprising a function of selected portions of the |
| | packet;" |
| d) | Limitation [16c] "(c) looking up a flow-entry database |
|) | comprising none or more flow-entries for previously |
| | encountered conversational flows, the looking up using at least |
| | some of the selected packet portions and determining if the |
| | packet is of an existing flow, the lookup being via a cache;".65 |
| e) | Limitation [16d] "(d) if the packet is of an existing flow, |
| , | classifying the packet as belonging to the found existing flow; |
| | and"66 |
| f) | Limitation [16e] "(e) if the packet is of a new flow, storing a |
| • | new flow-entry for the new flow in the flow-entry database, |
| | including identifying information for future packets to be |
| | identified with the new flow-entry," |
| | |



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