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(54) **SELECTION OF PEERS TO CLUSTER WITHIN A PEER-TO-PEER NETWORK**

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G06F 17/00   (2006.01)
(52) **U.S. Cl.**
USPC **707/622**; 707/227; 707/230
(58) **Field of Classification Search**
USPC 707/622; 709/227, 230
See application file for complete search history.

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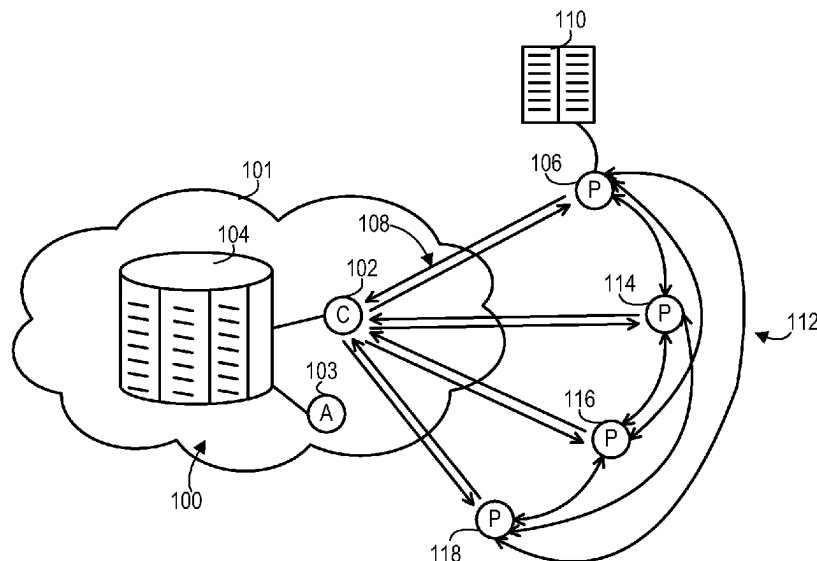
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(57) **ABSTRACT**

Peer-to-peer networks may be established by considering various characteristics of the peers when clustering the peers within the network. The characteristics may include operational criteria such as the cost of data transfer by each peer, the type and status of power being supplied to each peer, and the bandwidth available to each peer. The peer-to-peer networks may be established by requiring credentials to gain access to the peer-to-peer network, where those credentials may be a network access identifier that has previously been used to gain access to an underlying data network of the peer-to-peer network. The operational criteria used to select peers for clustering may be stored and accessed through association to the credentials used to gain access to the peer-to-peer network.
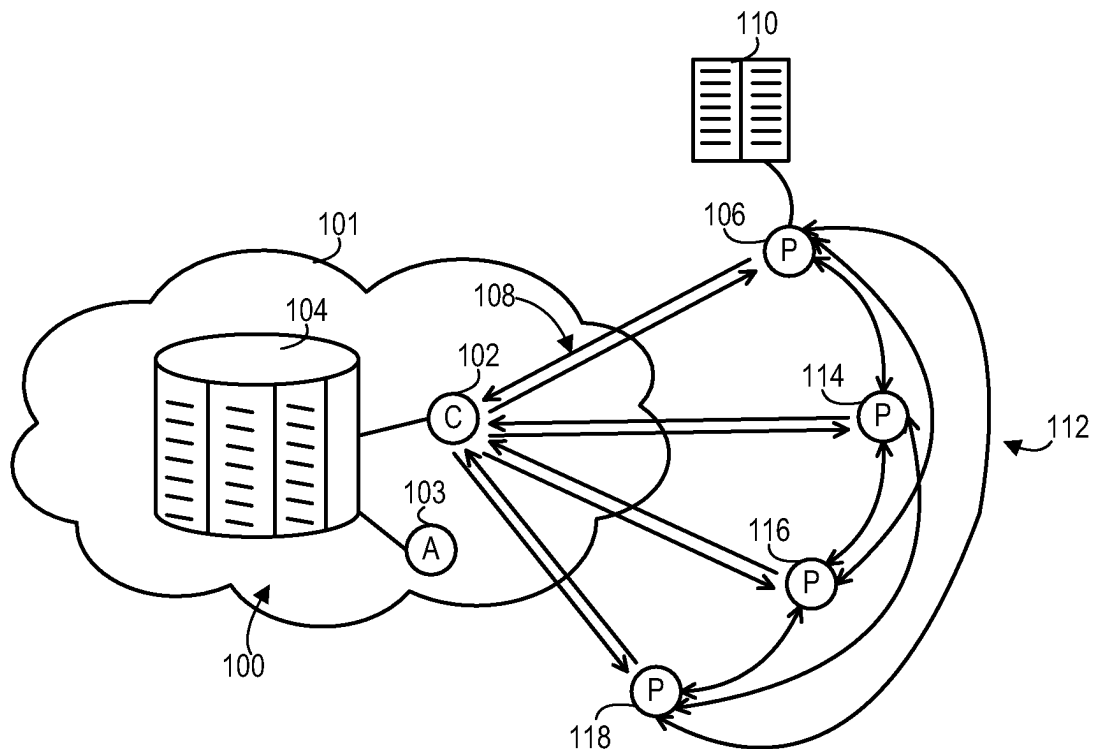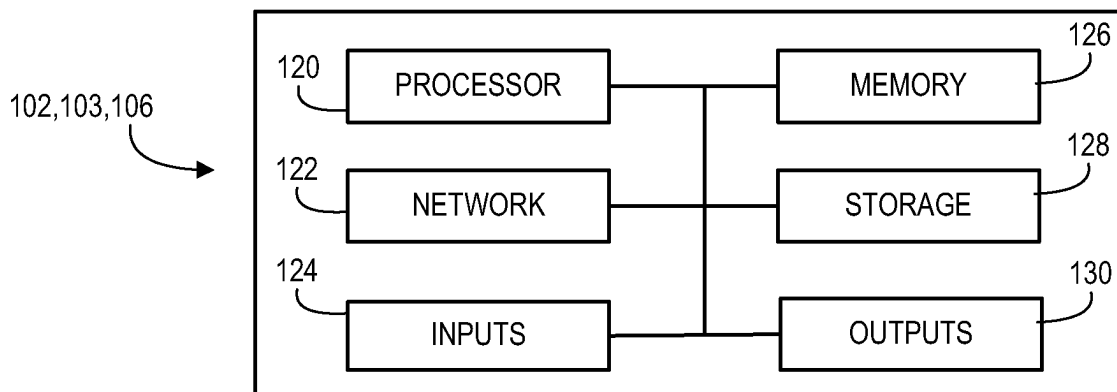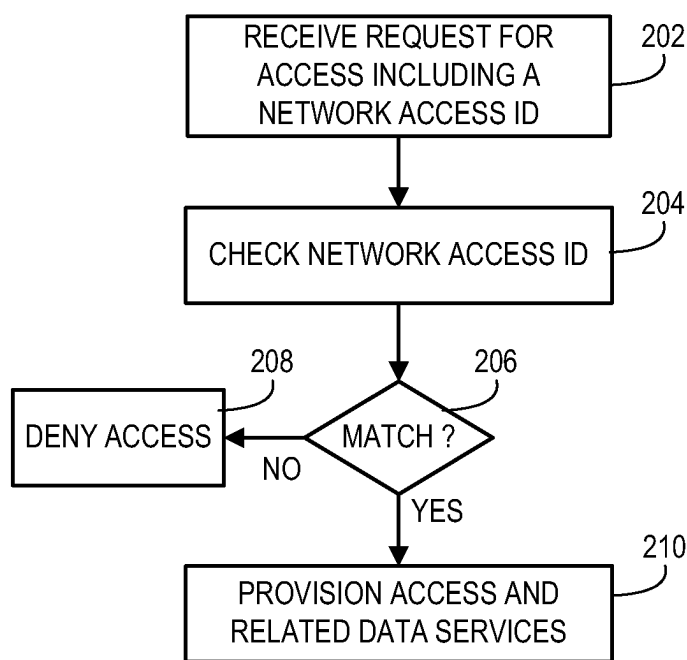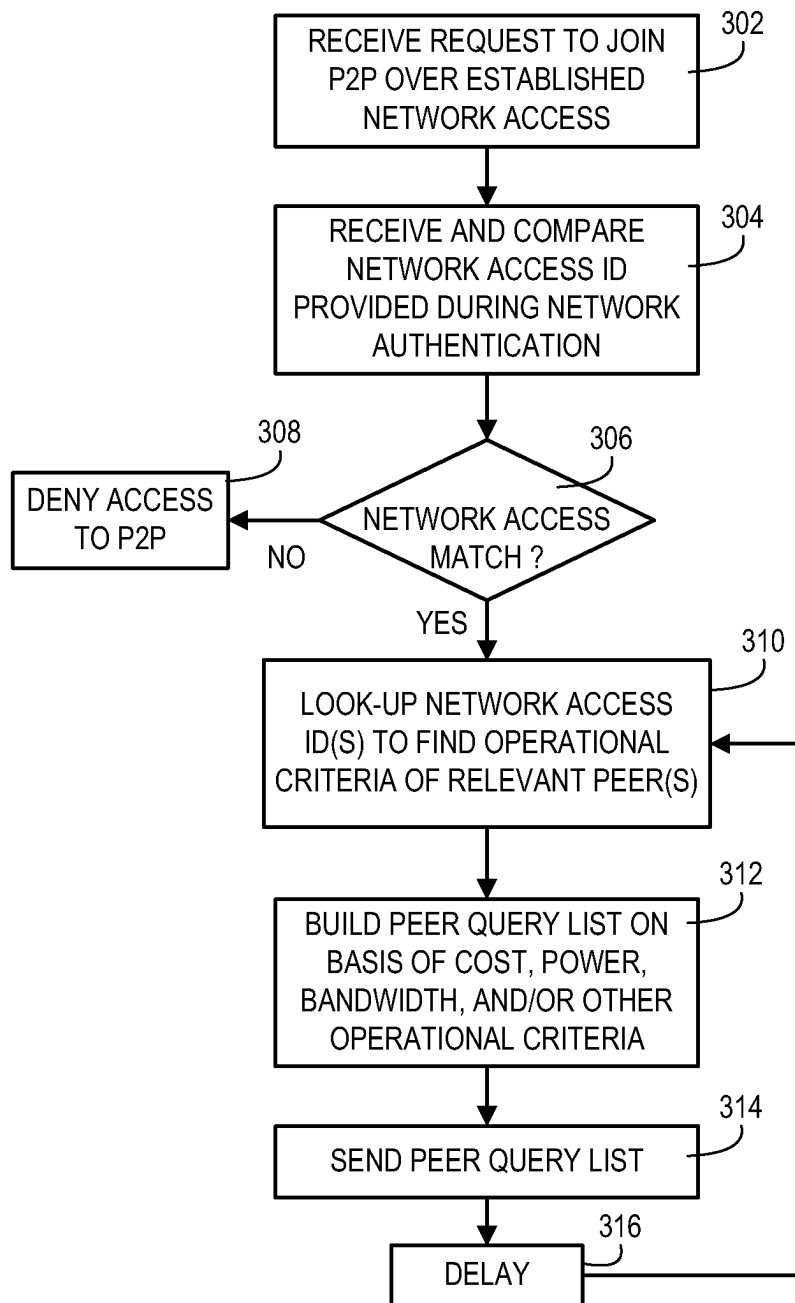
18 Claims, 6 Drawing Sheets

FIG. 1A

FIG. 1B

FIG. 2

RECEIVE REQUEST TO JOIN P2P OVER ESTABLISHED NETWORK ACCESS — 302

RECEIVE AND COMPARE NETWORK ACCESS ID PROVIDED DURING NETWORK AUTHENTICATION — 304

308 — DENY ACCESS TO P2P

306 — NETWORK ACCESS MATCH ?

NO

YES

LOOK-UP NETWORK ACCESS ID(S) TO FIND OPERATIONAL CRITERIA OF RELEVANT PEER(S) — 310

BUILD PEER QUERY LIST ON BASIS OF COST, POWER, BANDWIDTH, AND/OR OTHER OPERATIONAL CRITERIA — 312

SEND PEER QUERY LIST — 314

DELAY — 316

FIG. 3

312

DETERMINE WHICH PEERS HAVE A
COST/POWER/BANDWIDTH
CLASSIFICATION DESIRABLE FOR
QUERY LIST   402

ADD THOSE PEERS   404

FIG. 4

312

DETERMINE WHETHER THE
COST/POWER/BANDWIDTH
CLASSIFICATION OF CURRENT PEER
LIMITS CLASSIFICATIONS AVAILABLE
FOR CURRENT PEER'S QUERY LIST   502

ADD THOSE PEERS NOT LIMITED BY
CLASSIFICATIONS OF CURRENT PEER   504

FIG. 5

DOCKET ALARM
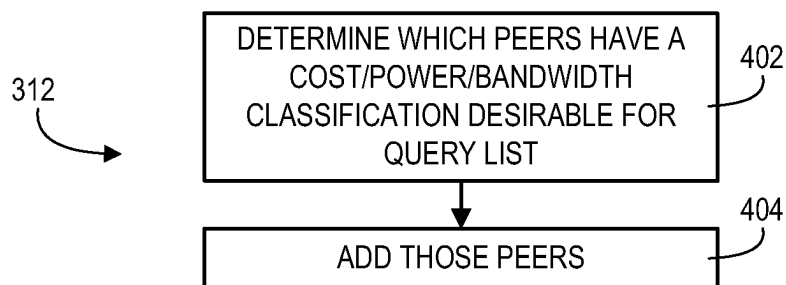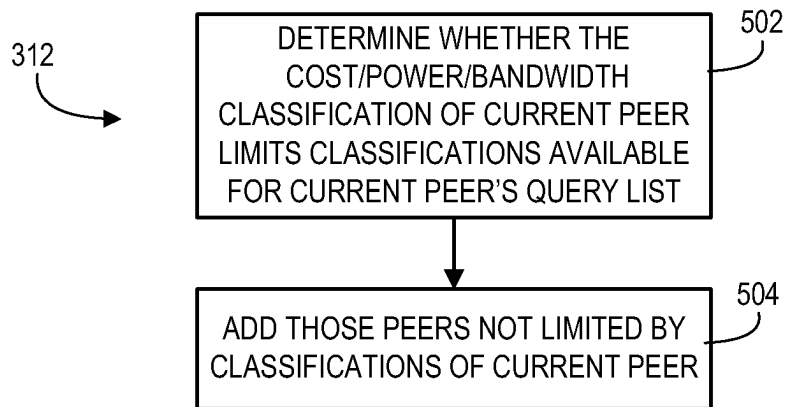
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