



- [54] NETWORK MANAGEMENT AGENT WITH USER CREATED OBJECTS PROVIDING ADDITIONAL FUNCTIONALITY
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- [52] U.S. Cl. 395/200; 395/425; 395/600; 395/650; 395/700; 395/775; 364/DIG. 1; 364/221; 364/222.81; 364/222.82; 364/280; 364/280.2; 364/280.3; 364/284
- [58] Field of Search 395/600; 364/280.9, 364/280.3, 280.2

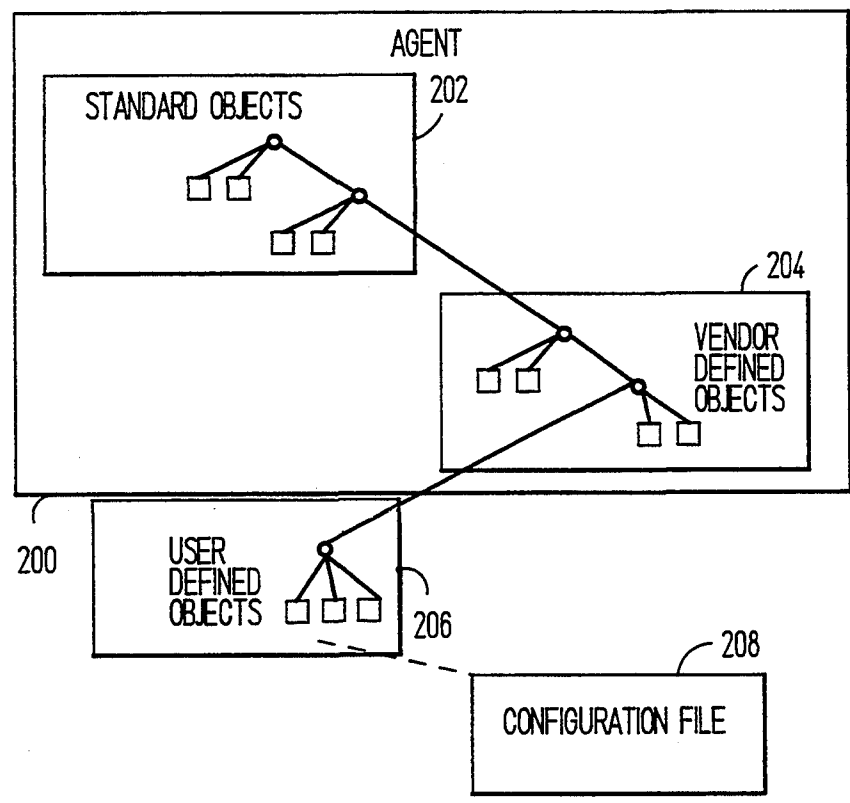
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 IRE WESCON Convention Record, vol. 35, Nov. 1991, pp. 190-195, S. R. Reasoner, "Management by Proxy Agent".

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[57] ABSTRACT
 A computer network management software agent which includes the ability for users to add new user defined management objects. A user editable text file defines object identifications, object types, and the path and name of associated executable software. A user can then invoke user defined executable software at a managed node by sending a network command and a user defined associated object identifier to the agent in the managed node. Data can be sent between a user and user defined executable software. A timeout feature generates an error if commands are not completed within a user defined time.

[56] References Cited
 PUBLICATIONS
 Individuals connected with Columbia University; "Kermit"; Screen prints of computer program.
 Novell, Inc.; *Net Wave Version 3.11 System Administration*, Novell, Inc., 1991.
 Simrin; *The MS-DOS Bible*; Howard Sams & Co.; pp. 389-390.
 IEEE Communications Magazine, vol. 29, No. 7, Jul.

1 Claim, 6 Drawing Sheets



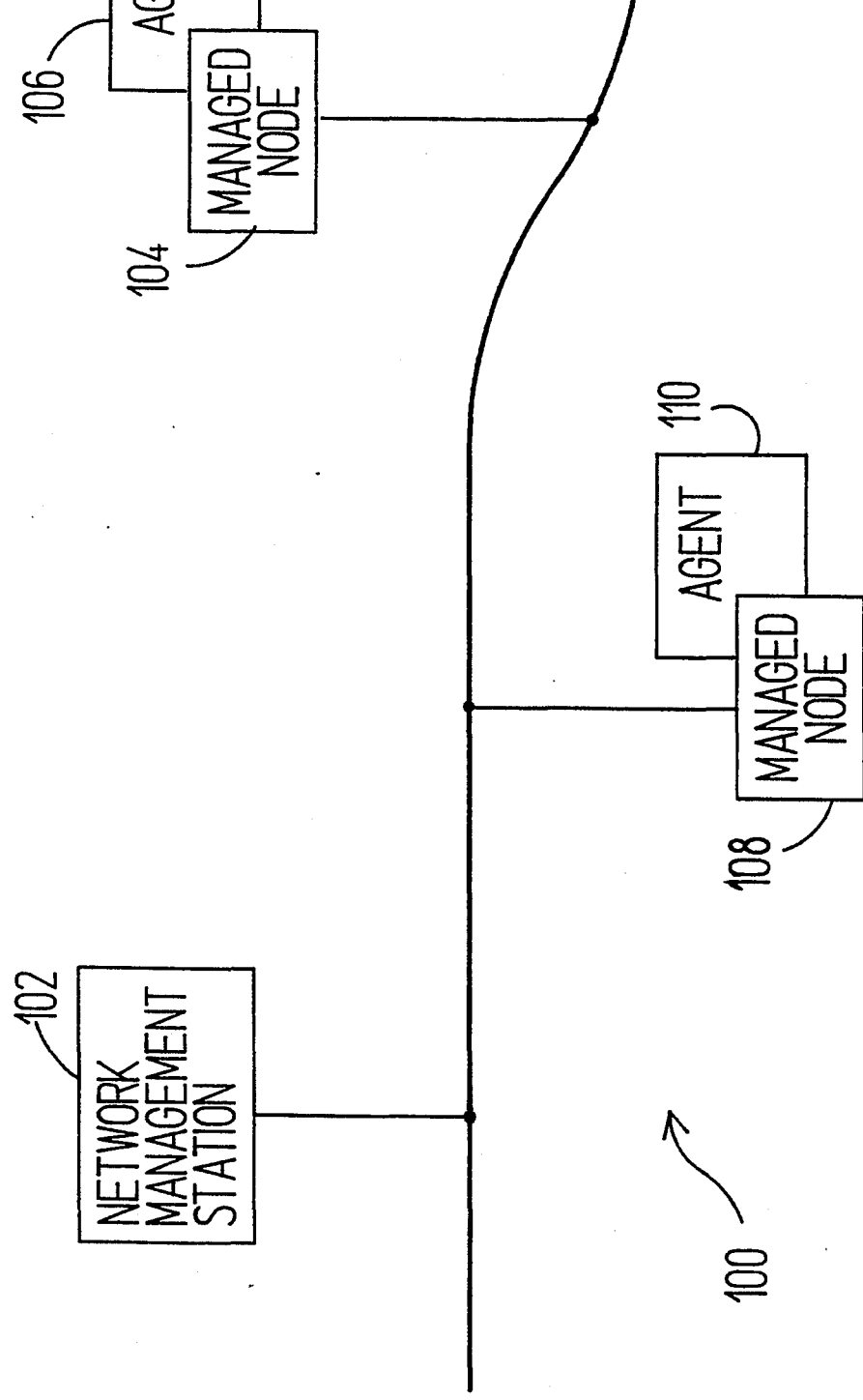


FIG 1

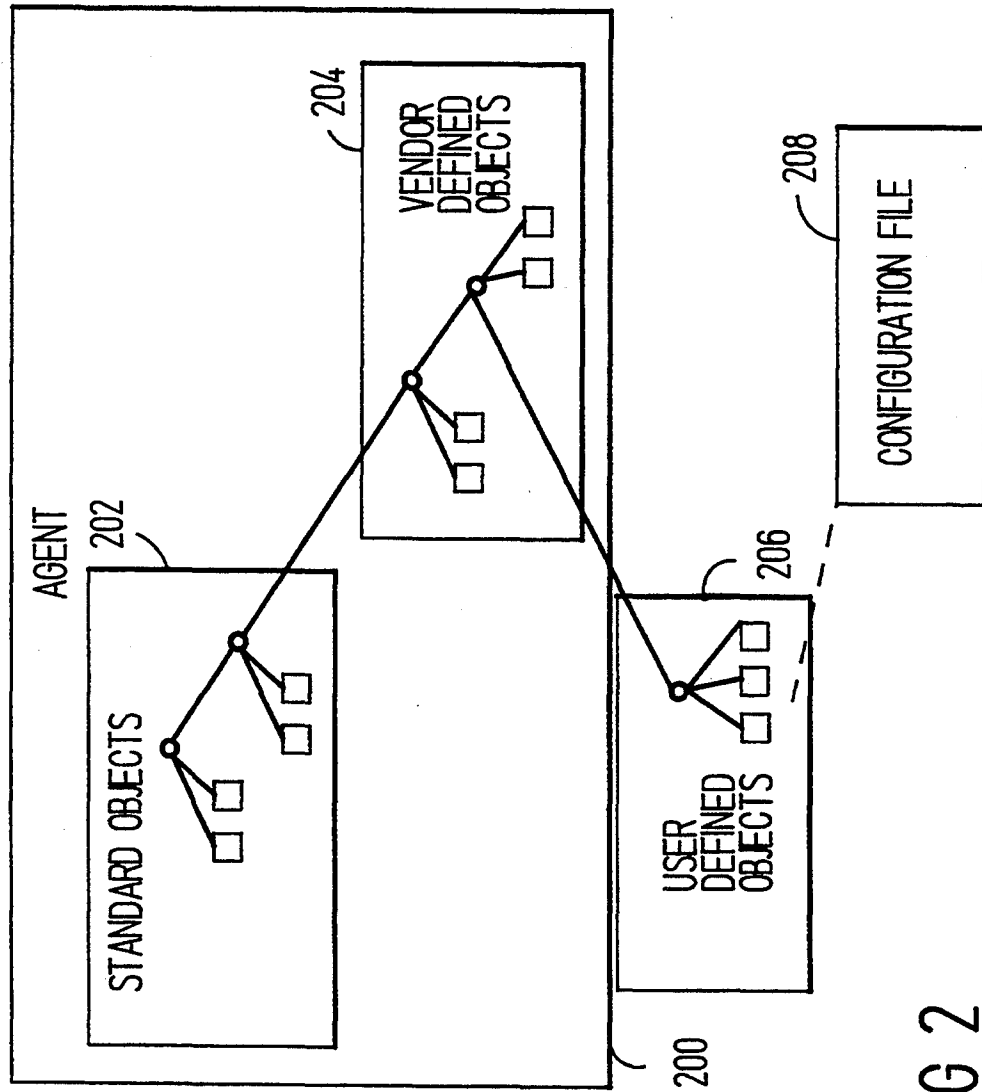


FIG 2

FIG 3A

An example agent configuration file would contain:

```

CUSTOMER-XYZ DEFINITIONS ::= BEGIN

private      OBJECT IDENTIFIER ::= { iso(1) org(3) dod(6) internet
enterprises OBJECT IDENTIFIER ::= { private 1 }

company-xyz  OBJECT IDENTIFIER ::= { enterprises 58 }
xyzprinter  OBJECT IDENTIFIER ::= { company-xyz 1 }
xyzusers    OBJECT IDENTIFIER ::= { company-xyz 2 }

printerstatus OBJECT-TYPE
SYNTAX      INTEGER {
312         up(1)
           down(2)
}
ACCESS      read-write
STATUS      mandatory
DESCRIPTION
308         "status of the laser printer
310         READ-COMMAND: /usr/local/bin/printer_status
306         WRITE-COMMAND: /usr/local/bin/change_printer_s
314         WRITE-COMMAND-TIMEOUT: 2"
 ::= { xyzprinter 1 }

```

```

printertype
OBJECT-TYPE
SYNTAX OCTET STRING
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "type of laser printer
    READ-COMMAND: /usr/local/bin/printer_type
    READ-COMMAND-TIMEOUT: 5"
 ::= { xyzprinter 2 }

user-logins
OBJECT-TYPE
SYNTAX OCTET STRING
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "list of user login ids that are currently logged
    READ-COMMAND: /usr/bin/users
    READ-COMMAND-TIMEOUT: 7"
 ::= { xyzusers 1 }

numusers
OBJECT-TYPE
SYNTAX Gauge
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "number of users logged in
    READ-COMMAND: /usr/bin/users | /bin/wc -w
    READ-COMMAND-TIMEOUT: 4"
 ::= { xyzusers 2 }
END

```

FIG 3B

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