ACCOUNTING BLOCK SERVICES

4/22/71

All manipulations of Accounting Blocks are to be performed using a single operation (DF:ABSV in OPERCL). The 1st parameter indicates the service to be performed. Unneeded parameters are indicated by "-" and are ignored. A maximum of 8 data words may be returned to the caller; no capabilities are ever returned.

All errors are class E.ABLOCK unless otherwise noted.
Service: Create Accounting Block

Input Parameters:

IP1 D: 0
IP2 D: -
IP3 D: -
IP4 D: -

Output Parameters:

D: (1 word) Accounting Block Number of new block
C: (none)

Action: New accounting block is created in Inactive state. All reservations, charges, etc. are zero, and may not be changed until the block has been activated.

Errors: (none)
Service: Activate Accounting Block

Input Parameters:
- IP1 D: 1
- IP2 D: Accounting Block Number
- IP3 D: -
- IP4 D: -

Output Parameters:
- D: (none)
- C: (none)

Action: Places the Accounting Block in the active state, allowing space to be moved in, charges to accumulate, etc.

Errors:
- E.NOABLK Accounting Block does not exist.
- E.ACTIV Accounting Block already active.
Service: Destroy Accounting Block

Input Parameters:
- IP1 D: 2
- IP2 D: Accounting Block Number
- IP3 D: -
- IP4 D: -

Output Parameters:
- D: (none)
- C: (none)

Action: Accounting Block is destroyed unless destruction is prevented by some error condition.

Errors:
- E.NOABLK Accounting Block does not exist, or is inactive.
- E.BUSY Accounting Block still funding processes and/or files.
- E.RESV Accounting Block still holding reserved space.
- E.BUSY Accounting Block "Account Tag" field non-zero.
- E.BUSY Charge meters in Accounting block non-zero.
Service: Display Accounting Block

Input Parameters:

IP1 D: 3
IP2 D: Accounting Block Number
IP3 D: -
IP4 D: -

Output Parameters:

D: (8 words) Contents of Accounting Block
C: (none)

Action: The entire accounting block is returned.

Errors:

E.NOABLK Accounting Block does not exist, or is inactive.
Service: Move Disk Space (Father-to-Son)

Input Parameters:

IP1  D:  4
IP2  D: Accounting Block Number (Father)
IP3  D: Accounting Block Number (Son)
IP4  D: Amount of Disk Space (sectors)

Output Parameters:

D: (none)
C: (none)

Action:

Surplus := Reserved(Father) - Occupied(Father);
if Surplus < IP4 then go to Trimfather;
Occupied (Father) := Occupied(Father) + IP4;
Reserved (son) := Reserved (son) + IP4;
Rate(son) := Rate(son) + IP4;
Return;

Trimfather:
Occupied(Father) := Reserved(Father);
Reserved(Son) := Reserved(son) + Surplus;
Rate(Son) := Rate(son) + Surplus;
X6(Caller) := Surplus;
Freturn

Errors:

E.NOABLK       Accounting block does not exist
E.NEGPAR*      Amount to move is negative

(* class = E.PARMS )
Service: Move Disk Space (Son-to-Father)

Input Parameters:

\[ \begin{align*}
\text{IP1} & \text{ D: 5} \\
\text{IP2} & \text{ D: Accounting Block Number (Father)} \\
\text{IP3} & \text{ D: Accounting Block Number (Son)} \\
\text{IP4} & \text{ D: Amount of Disk Space (sectors)}
\end{align*} \]

Output Parameters:

\[ \begin{align*}
\text{D: (none)} \\
\text{C: (none)}
\end{align*} \]

Action:

\[ \begin{align*}
\text{Surplus} & \text{ := Reserved(Son) - Occupied(Son);} \\
\text{if Surplus < IP4 then go to Trimson;}
\end{align*} \]

\[ \begin{align*}
\text{Occupied (Father)} & \text{ := Occupied(Father) - IP4;} \\
\text{Reserved (Son)} & \text{ := Reserved (Son) - IP4;} \\
\text{Rate(Son)} & \text{ := Rate(son) - IP4;} \\
\text{Return;}
\end{align*} \]

Trimson:

\[ \begin{align*}
\text{Occupied(Father)} & \text{ := Occupied(Father) - Surplus;} \\
\text{Reserved(Son)} & \text{ := Occupied(son);} \\
\text{Rate(Son)} & \text{ := Rate(Son) - Surplus;} \\
\text{X6(Caller)} & \text{ := Surplus;} \\
\text{Return}
\end{align*} \]

Errors:

\[ \begin{align*}
\text{E.NOABLK} & \text{ Accounting Block does not exist} \\
\text{E.NEGPAR*} & \text{ Amount to move is negative}
\end{align*} \]

(* class = E.PARMS )
Service: Increment Charge meter

Input Parameters:

- IP1 D: 6
- IP2 D: Accounting block Number
- IP3 D: Increment (+ or -)
- IP4 D: -

Output Parameters:

- D: (none)
- C: (none)

Action: The increment is added to the discontinuous charge meter in the accounting block. (60 bit integer add). The meter counts up by usec/1024, hence the units of the increment should be sector-milliseconds.

Errors:

E.NOABLK Accounting block does not exist (or is inactive)
Service: Set Accounting Tag in Accounting Block

Input Parameters:
- IP1 D: 7
- IP2 D: Accounting Block Number
- IP3 D: Value for Tag
- IP4 D: -

Output Parameters:
- D: (none)
- C: (none)

Action: Sets the 18 bit Account Tag field in the Accounting Block to the value provided.

Errors:
- E.NOABLK Accounting Block does not exist, or is inactive.