The Paging Game
By Jeff Berryman

Rules:

1. Each player gets several million things.

2. Things are kept in crates that hold 4096 things each. Things in the same crate are called crate-mates.

3. Crates are stored either in the workshop or the warehouse. The workshop is almost always too small to hold all the crates.

4. There is only one workshop but there may be several warehouses. Everybody shares them.

5. Each thing has its own thing number.

6. What you do with a thing is to zark it. Everybody takes turns zarking.

7. You can only zark your things. Not anybody else's.

8. Things can only be zarked when they are in the workshop.

9. Only the Thing King knows whether a thing is in the workshop or in a warehouse.

10. The longer a thing goes without being zarked, the grubbier it is said to become.

11. The way you get things is to ask the Thing King. He only gives out things in multiples of eight. This is to keep the royal overhead down.

12. The way you zark a thing is to give its thing number. If you give the number of a thing that happens to be in the workshop it gets zarked right away. If it is in a warehouse, the Thing King moves the crate containing your thing back in to the workshop. If there is no room in the workshop, he first finds the grubbiest crate in the workshop, whether it be yours or somebody else's, and packs it off with all of its crate-mates to a warehouse. In its place he puts the crate containing your thing. Your thing then gets zarked and you never knew that it wasn't in the workshop all along.

13. Each player's stock of things have the same numbers as everybody else's. The Thing King always knows who owns what thing and whose turn it is, so you can't ever accidentally zark somebody else's thing even if it has the same thing number as one of yours.

Notes:

1. Traditionally, the Thing King sits at a large segmented table and is attended to by Pages (the so-called "Table Pages") whose job it is to help the Thing King remember where all the things are and who they belong to.

2. One consequence of rule 13 is that everybody's thing numbers will be similar from game to game, regardless of the number of players.

3. The Thing King has a few things of his own, some of which move back and forth between workshop and warehouse just like anybody else's, but some of which are just too heavy to move out of the workshop.

4. With the given set of rules, oft-zarked things tend to be kept mostly in the workshop while little-zarked things stay mostly in a warehouse. This is efficient stock control.

5. Sometimes even the warehouses get full. The Thing King then has to start piling things on the dump out back. This makes the game slower because it takes a longer time to get things off the dump when they are needed in the workshop. A forthcoming change in the rules will allow the Thing King to select the grubbiest things in the warehouses and send them to the dump in his spare time, thus keeping the warehouses from getting too full. This means that the most infrequently-zarked things will end up in the dump so the Thing King won't have to get things from the dump so often. This should speed up the game when there are a lot of players and the warehouses are getting full.

LONG LIVE THE THING KING

Term	Meaning in VM terms
game	The system
player	Virtual machine (userid)
thing	Byte of virtual memory; virtual memory
crate	Page
workshop	Real memory
warehouse	Paging area
thing number	Address
zark	Reference (refer to): look at or change
take a turn	Execute ("run')
Thing King	Paging subsystem
Grubbier	Older (greater time since reference)
royal overhead	Paging overhead
moving a crate	Paging a page in or out
segmented table	Segment tables
Table Pages	Page tables
too heavy to move	Always resident in real memory
piling things	Page migration
dump out back	Non-preferred paging areas
spare time	Periodically