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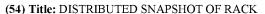
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(57) Abstract: Here when we are required to take distributed snapshot of a rack, the Distributed Snapshot Service will generate a snapshot token consisting of the rack identifier and a local timestamp. The generated snapshot token will be forwarded to the spine switch connecting all the different cloud components of the rack. The spine switch of the rack will forward the snapshot token to all different cloud components of the rack and the messages or events that have to be considered for the distributed snapshot will be tagged with the snapshot token by the spine switch. The cloud components of the rack will independently take their snapshots and tag it with the snapshot token and component identifier, and send it to the remote Distributed Snapshot Service.



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# Distributed Snapshot of Rack

In this invention we provide distributed snapshot of different subsystems of the cloud like virtual switching nodes, virtual compute nodes and virtual storage nodes held by the rack. When we are required to take distributed snapshot of a rack, the Distributed Snapshot Service will generate a snapshot token consisting of the rack identifier and timestamp of the system where the Distributed Snapshot Service is running. The generated snapshot token will be forwarded to the cloud component consisting of the entry point for the packets of the rack or the spine switch of the rack connecting all the different cloud components of the rack like virtual switching nodes, virtual compute nodes, virtual storage nodes, etc. The spine switch of the rack will forward the snapshot token to all different cloud components of the rack and the messages or events that have to be considered for the distributed snapshot will be tagged with the snapshot token by the spine switch and subsequently other components in the rack will tag the snapshot token as well for events or messages generated due to the above spine switch snapshot token tagged event or message. The cloud components of the rack will independently take their snapshots and tag it with the snapshot token and component identifier, and send it to the remote Distributed Snapshot Service.

## Claims

Following is the claim for this invention:-

1. In this invention we provide distributed snapshot of different subsystems of the cloud like virtual switching nodes, virtual compute nodes and virtual storage nodes held by the rack. When we are required to take distributed snapshot of a rack, the Distributed Snapshot Service will generate a snapshot token consisting of the rack identifier and timestamp of the system where the Distributed Snapshot Service is running. The generated snapshot token will be forwarded to the cloud component consisting of the entry point for the packets of the rack or the spine switch of the rack connecting all the different cloud components of the rack like virtual switching nodes, virtual compute nodes, virtual storage nodes, etc. The spine switch of the rack will forward the snapshot token to all different cloud components of the rack and the messages or events that have to be considered for the distributed snapshot will be tagged with the snapshot token by the spine switch and subsequently other components in the rack will tag the snapshot token as well for events or messages generated due to the above spine switch snapshot token tagged event or message. The cloud components of the rack will independently take their snapshots and tag it with the snapshot token and component identifier, and send it to the remote Distributed Snapshot Service. The above novel technique of taking Distributed Snapshot of the rack holding different cloud components is the claim for this invention.

#### INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC

#### FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases: TotalPatent One, IPO Internal Database

Keywords: snapshot, distributed, token, virtual, cloud

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Further documents are listed in the continuation of Box C.

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 8489831 B2 (HEWLETT PACKARD ENTERPRISE DEVELOPMENT LP) 16 July 2013 (16.07.2013) abstract, column 1 lines 62-67, claim 1	1
Υ	US 20110258461 A1 (EMC CORP) 20 October 2011 (20/10/2011) paragraphs [0008]-[0011], claims 1 and 7	1

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*	Special categories of cited documents:	"T"	later document published after the international filing date or priority		
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See patent family annex.

### INTERNATIONAL SEARCH REPORT

Information on patent family members

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Citation	Pub.Date	Family	Pub.Date
US 8489831 B2 US 2011258461 A1		US 2010082921 A1 CA 2751180 A1 EP 2391968 A2 US 2010199042 A1 US 2014245026 A1 WO 2010088437 A2	01-04-2010 05-08-2010 07-12-2011 05-08-2010 28-08-2014 05-08-2010