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Contains index to the educational and research archives of C-SPAN programming.  
IBM TS7700 Release  
4.2 Guide

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IBM TS7700 Release  
3.3

Advertisers business  
classifications

*Abstract This*

*IBM® Redbooks®*

*publication*

*presents a general  
introduction to the  
latest IBM tape and  
tape library  
technologies.*

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*Featured tape technologies include the IBM LTO Ultrium and Enterprise 3592 tape drives, and their implementation in IBM tape libraries. This 15th edition includes information about the latest TS4300*

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*Ultrium tape library, TS1155 Enterprise tape drive, and the IBM Linear Tape-Open (LTO) Ultrium 8 tape drive, along with technical information about each IBM tape product for open systems. It includes generalized*

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*sections about*

*Small Computer*

*System Interface*

*(SCSI) and Fibre*

*Channel*

*connections, and*

*multipath*

*architecture*

*configurations. This*

*book also covers*

*tools and*

*techniques for*

*library*

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*management. It is intended for anyone who wants to understand more about IBM tape products and their implementation. It is suitable for IBM clients, IBM Business Partners, IBM specialist sales representatives, and technical*

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*specialists. If you do not have a background in computer tape storage products, you might need to read other sources of information. In the interest of being concise, topics that are generally understood are not*

Bookmark File  
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*covered in detail.*

*IBM Virtualization  
Engine TS7700*

*with R 2.0*

*Catalog of  
Copyright Entries.*

*Third Series*

*1972: January-June*

*Wiley CIA Exam*

*Review 2013,*

*Internal Audit*

*Practice*

**This IBM®**

*Page 8/67*



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publication highlights  
TS7700 Virtualization  
Engine Release 2.0. It  
is intended for system  
architects who want to  
integrate their storage  
systems for smoother  
operation. The IBM  
Virtualization Engine  
TS7700 offers a  
modular, scalable,  
and high-performing  
architecture for

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mainframe tape  
virtualization for the  
IBM System z®  
environment. It  
integrates 3592 Tape  
Drives, high-  
performance disks,  
and the new IBM  
System p® server into  
a storage hierarchy.  
This storage hierarchy  
is managed by robust  
storage management  
firmware with

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extensive self-  
management  
capability. It includes  
the following  
advanced functions:  
Policy management to  
control physical  
volume pooling Cache  
management Dual  
copy, including across  
a grid network Copy  
mode control The  
TS7700 Virtualization  
Engine offers

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enhanced statistical reporting. It also includes a standards-based management interface for TS7700 Virtualization Engine management. The new IBM Virtualization Engine TS7700 Release 2.0 introduces the next generation of TS7700 Virtualization Engine servers for System z

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tape: IBM

Virtualization Engine

TS7720 Server Model

VEB IBM

Virtualization Engine

TS7740 Server Model

V07 These

Virtualization Engines

are based on IBM

POWER7®

technology. They offer

improved

performance for most

System z tape

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workloads compared  
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to the first generation  
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of TS7700

Virtualization Engine  
servers.

NASA REPORTS  
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1990/REPORT  
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SUBCOMMITTEE ON  
SPACE  
TRANSMITTED TO  
THE COMMITTEE

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TECHNOLOGY

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Report Prepared by  
the Subcommittee on  
Space, Transmitted to  
the Committee on  
Science, Space, and  
Technology, U.S.

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targeted to  
Senior IT  
professionals.

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celebrates  
people,  
companies, and  
projects.

Technical



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June issues,

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Government  
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Guide for Open  
Systems  
Computerworld

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40 years,*

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has been the  
leading source  
of technology  
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information for  
IT influencers  
worldwide.*

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award-winning  
Web site (Compu*

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publication,  
focused  
conference  
series and  
custom research  
form the hub of  
the world's  
largest global  
IT media  
network.*

*Report of the*

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Secretary of  
Ca Rs 1603  
the Senate from  
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...

*Roster of  
Organizations  
in the Field of  
Automatic  
Computer  
Machinery  
Official  
Gazette of the  
United States  
Patent and*

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*Trademark*

*Office*

*Data Processing*

*Digest*

**Note: The IBM**

**TS7700 Release 4.0**

**Guide, SG24-8366 is**

**available at: [http://w](http://www.redbooks.ibm.com/abstracts/sg248366.html)**

**ww.redbooks.ibm.co**

**m/abstracts/sg24836**

**6.html IBM® TS7700**

**is a family of**

**mainframe virtual**

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*tape solutions that  
optimize data  
protection and  
business continuance  
for IBM z Systems™  
data. Through the  
use of virtualization  
and disk cache, the  
TS7700 family  
operates at disk  
speeds while  
maintaining  
compatibility with  
existing tape*

Bookmark File  
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*operations. Its fully integrated tiered storage hierarchy takes advantage of both disk and tape technologies to deliver performance for active data and best economics for inactive and archive data. This IBM Redbooks® publication describes the TS7700 R3.3*



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*architecture,  
planning, migration,  
implementation, and  
operations. The latest  
TS7700 family of z  
Systems tape  
virtualization is  
offered as two  
models: IBM TS7720  
features encryption-  
capable high-capacity  
cache that uses 3 TB  
SAS disk drives with  
RAID 6, which can*

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*scale to large  
capacities with the  
highest level of data  
protection. IBM  
TS7740 features  
encryption-capable  
600 GB SAS drives  
with RAID 6  
protection. Both  
models write data by  
policy to physical  
tape through  
attachment to high-  
capacity, high-*

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*performance IBM  
TS1150 and earlier  
IBM 3592 model tape  
drives that are  
installed in IBM  
TS3500 tape  
libraries. Physical  
tape support is  
optional on TS7720.  
TS7700 R3.3 also  
supports external key  
management for disk-  
based encryption by  
using IBM Security*

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Key Lifecycle

*Manager. This book  
intended for system  
architects who want  
to integrate their  
storage systems for  
smoother operation.  
Computer Decisions  
InfoWorld*

*Space Operations :  
NASA is Not Properly  
Safeguarding Valuable  
Data from Past*

*Missions: Report to*

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*the Committee on  
Science, Space, and  
Technology, House of  
Representatives  
Argonne Computing  
Newsletter*

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**publication**

**covers IBM**

**TS7700 R5.2.**

**The IBM TS7700**

**is part of a**

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family of IBM  
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Enterprise  
Service List  
tape products.

This book is  
intended for  
system  
architects and  
storage  
administrators  
who want to  
integrate  
their storage

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systems for  
Ca Rs 1603  
optimal  
Service List  
operation.

Building on 25  
years of  
experience,  
the R5.2  
release  
includes many  
features that  
enable  
improved

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performance,  
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usability, and  
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security.

Highlights  
include IBM  
TS7700

Advanced  
Object Store,  
an all flash  
TS7770, grid  
resiliency  
enhancements,



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and Logical  
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WORM  
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retention. By  
using the same  
hierarchical  
storage  
techniques,  
the TS7700  
(TS7770 and  
TS7760) can  
also off load  
to object

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storage.  
Ca Rs 1603  
Service List  
Because object  
storage is  
cloud-based  
and accessible  
from different  
regions, the  
TS7700 Cloud  
Storage Tier  
support  
essentially  
allows the

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Management 14.0

cloud to be an

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extension of

the grid. As

of this

writing, the

TS7700C

supports the

ability to off

load to IBM

Cloud® Object

Storage,

Amazon S3, and

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RSTOR. This  
Ca Rs 1603  
Service List  
publication  
explains

features and  
concepts that  
are specific  
to the IBM  
TS7700 as of  
release R5.2.  
The R5.2  
microcode  
level provides

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IBM TS7700  
Ca Rs 1603  
Cloud Storage  
Service List  
Tier

enhancements,  
IBM DS8000®  
Object Storage  
enhancements,  
Management  
Interface dual  
control  
security, and  
other smaller

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enhancements.

Ca Rs 1603  
Service List  
The R5.2  
microcode

level can be  
installed on  
the IBM TS7770  
and IBM TS7760  
models only.

Note: The  
latest Release  
5.2 was split  
into two

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phases: R5.2

Ca Rs 1603

Phase 1 (also  
referred to as

Service List

and ) R5.2

Phase 2 ( and

R) TS7700

provides tape  
virtualization  
for the IBM z  
environment.

Off loading to  
physical tape

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Management 14 0

behind a  
TS7700 is used  
by hundreds of  
organizations  
around the  
world. Tape  
virtualization  
can help  
satisfy the  
following  
requirements  
in a data



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processing  
Ca Rs 1603  
environment.

Service List  
New and

existing  
capabilities  
of the TS7700  
5.2.2 release  
includes the  
following  
highlights:

Eight-way Grid  
Cloud, which

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consists of up

to three

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Service List

generations of

TS7700

Synchronous

and

asynchronous

replication of

virtual tape

and TCT

objects Grid

access to all

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Management 14.0  
logical volume  
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Service List  
and object  
data that is  
independent of  
where it  
exists An all-  
flash TS7770  
option for  
improved  
performance  
Full Advanced  
Object Store

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Grid Cloud  
Ca Rs 1603  
support of  
Service List  
DS8000

Transparent  
Cloud Tier  
Full AES256  
encryption for  
data that is  
in-flight and  
at-rest Tight  
integration  
with IBM Z®

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and DFSMS  
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policy  
Service List  
management

DS8000 Object  
Store AES256  
in-flight  
encryption and  
compression  
Regulatory  
compliance  
through  
Logical WORM

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and LWORM  
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Retention  
Service List  
support Cloud  
Storage Tier  
support for  
archive,  
logical volume  
version, and  
disaster  
recovery  
Optional  
integration

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with physical  
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tape 16 Gb IBM  
Service List  
FICON®

throughput  
that exceeds 5  
GBps per  
TS7700 cluster  
Grid  
Resiliency  
Support with  
Control Unit  
Initiated Reco

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nfiguration  
Ca Rs 1603  
(CUIR) support  
Service List  
IBM Z hosts  
view up to  
3,968 common  
devices per  
TS7700 grid  
TS7770 Cache  
On-demand  
feature that  
is based  
capacity



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licensing  
Ca Rs 1603  
Service List  
TS7770 support  
of SSD within  
the VED server  
The TS7700T  
writes data by  
policy to  
physical tape  
through  
attachment to  
high-capacity,  
high-

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performance  
Ca Rs 1603  
Service List

IBM TS1160,  
IBM TS1150,  
and IBM TS1140  
tape drives  
that are  
installed in  
an IBM TS4500  
or TS3500 tape  
library. The  
TS7770 models  
are based on h

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igh-  
Ca Rs 1603  
Service List  
performance  
and redundant  
IBM POWER9™  
technology.  
They provide  
improved  
performance  
for most IBM Z  
tape workloads  
when compared  
to the

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previous  
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generations of  
IBM TS7700.

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Congress

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In its 114th year, Billboard remains the world's premier weekly music publication and a diverse digital, events, brand, content and data licensing platform.

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publishes the  
most trusted  
charts and  
offers  
unrivaled  
reporting about  
the latest  
music, video,  
gaming, media,  
digital and  
mobile  
entertainment  
issues and

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trends.

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Computers and  
Automation

New York State  
Contract

Reporter

IBM TS7700

Release 5.2.2

Guide

This IBM®

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publication covers

IBM TS7700 R4.2.

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The IBM TS7700 is part of a family of IBM Enterprise tape products. This book is intended for system architects and storage administrators who want to integrate their storage systems for optimal operation. Building on over 20 years of virtual tape experience, the



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TS7760 now supports the ability to store virtual tape volumes in an object store. The TS7700 has supported off loading to physical tape for over two decades. Off loading to physical tape behind a TS7700 is utilized by hundreds of organizations around the world.

# Bookmark File PDF Ca 1 Tape Management 14 0

Using the same hierarchical storage techniques, the TS7700 can also off load to object storage. Given object storage is cloud based and accessible from different regions, the TS7760 Cloud Storage Tier support essentially allows the cloud to be an

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extension of the grid.

As of the release of this document, the TS7760C supports the ability to off load to IBM Cloud Object Storage as well as Amazon S3. To learn about the TS7760 cloud storage tier function, planning, implementation, best practices, and support

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see IBM Redpaper

IBM TS7760 R4.2

Service List  
Cloud Storage Tier

Guide, redp-5514 at: h

ttp://www.redbooks.ib

m.com/abstracts/redp5

514.html The IBM

TS7700 offers a

modular, scalable, and

high-performance

architecture for

mainframe tape

virtualization for the

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Service List

IBM Z® environment.  
It is a fully integrated,  
tiered storage  
hierarchy of disk and  
tape. This storage  
hierarchy is managed  
by robust storage  
management  
microcode with  
extensive self-  
management  
capability. It includes  
the following

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advanced functions:

Improved reliability  
and resiliency

Reduction in the time  
that is needed for the  
backup and restore  
process Reduction of  
services downtime  
that is caused by  
physical tape drive  
and library outages  
Reduction in cost,  
time, and complexity

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by moving primary  
workloads to virtual  
tape More efficient  
procedures for  
managing daily  
backup and restore  
processing

Infrastructure  
simplification through  
reduction of the  
number of physical  
tape libraries, drives,  
and media TS7700

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Service List

delivers the following  
new capabilities:

TS7760C supports the  
ability to off load to  
IBM Cloud Object  
Storage as well as  
Amazon S3 8-way  
Grid Cloud consisting  
of any generation of  
TS7700 Synchronous  
and asynchronous  
replication Tight  
integration with IBM



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Z and DFSMS policy  
management Optional  
Transparent Cloud  
Tiering Optional  
integration with  
physical tape  
Cumulative 16Gb  
FICON throughput up  
to 4.8GB/s 8 IBM Z  
hosts view up to 496 8  
equivalent devices  
Grid access to all data  
independent of where

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it exists The TS7760T writes data by policy to physical tape through attachment to high-capacity, high-performance IBM TS1150 and IBM TS1140 tape drives installed in an IBM TS4500 or TS3500 tape library. The TS7760 models are based on high-

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performance and  
redundant IBM  
POWER8®  
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technology. They provide improved performance for most IBM Z tape workloads when compared to the previous generations of IBM TS7700.