z/OS 3.2 IBM Education Assistant

Solution Name: DFSMSdss S3 Support Direct to Cloud

Solution Element(s): DFSMSdss

DFSMSdfp CDA (Cloud Data Access)

July 2025

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Agenda

- Trademarks
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Trademarks

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  - IBM® , IBM Z®,

- Additional Trademarks:
  - None.

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Objectives

- Why is DSS providing Direct to Cloud support
  - User-Driven flexibility in data management on the cloud
    - Cloud provider features
  - Any Cloud, not just S3/IBMCOS.
    - Microsoft Azure, Google Cloud, etc.
  - DSS has an existing Cloud solution which uses DS88000 Transparent Cloud Tiering (TCT)
    - Requires IBM Disk Storage
    - Single cloud configuration (multiple clouds may be configured)

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Overview

- Who (Audience)
  - As a storage administrator I want to have options for data availability strategy for my z/OS Volume and data sets.
- What (Solution)
  - I want DFSMSdss to provide a flexible method to tailoring how I want cloud object storage managed.
- Wow (Benefit / Value, Need Addressed)
  - My team has the ability to take advantage of the scalability cloud object storage provides while having simplified data availability choices so that I can plan how my data should be managed in the cloud.

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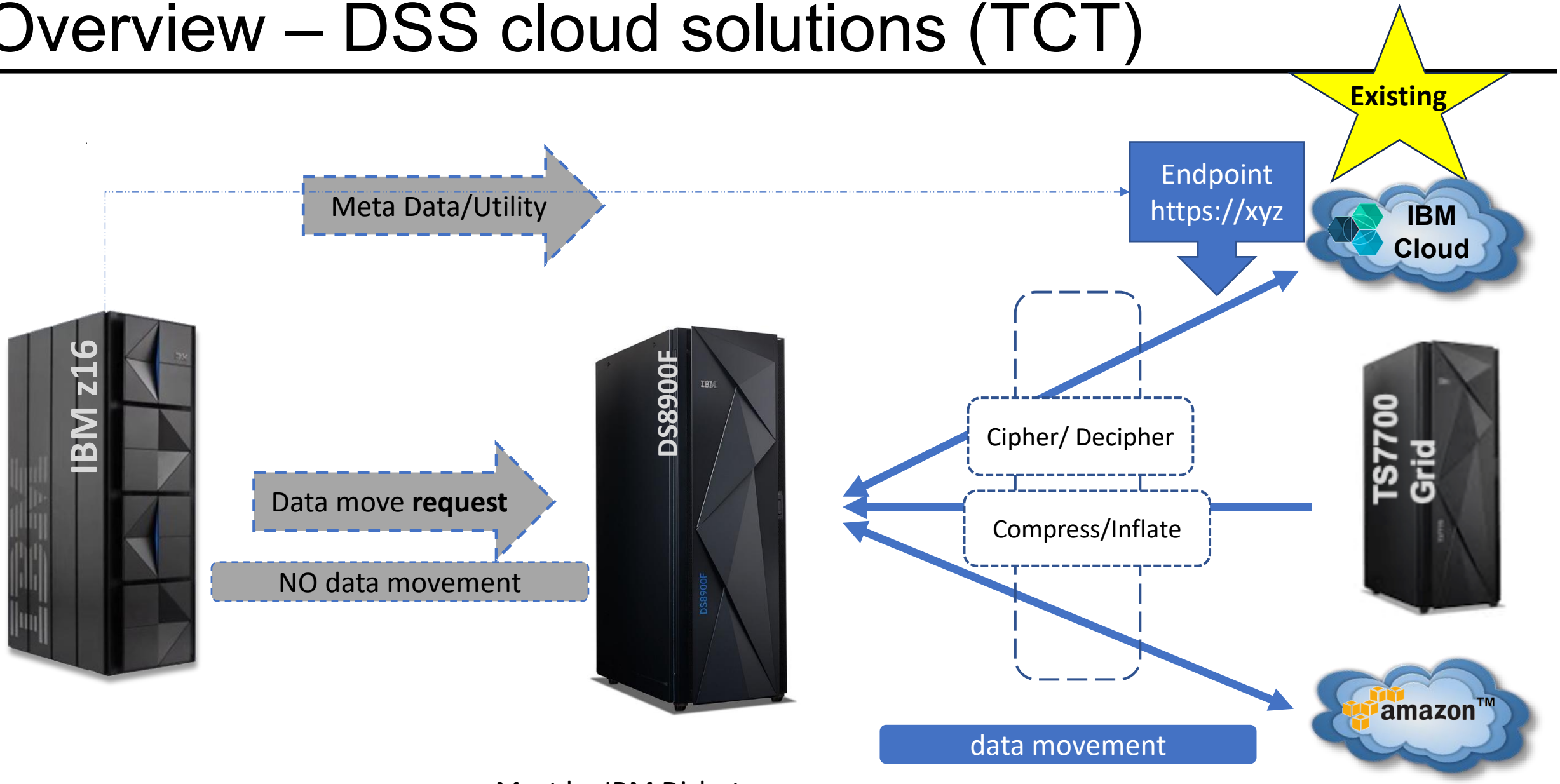
Overview – DSS cloud solutions (TCT)



Must be IBM Disk storage.
Single cloud connection options

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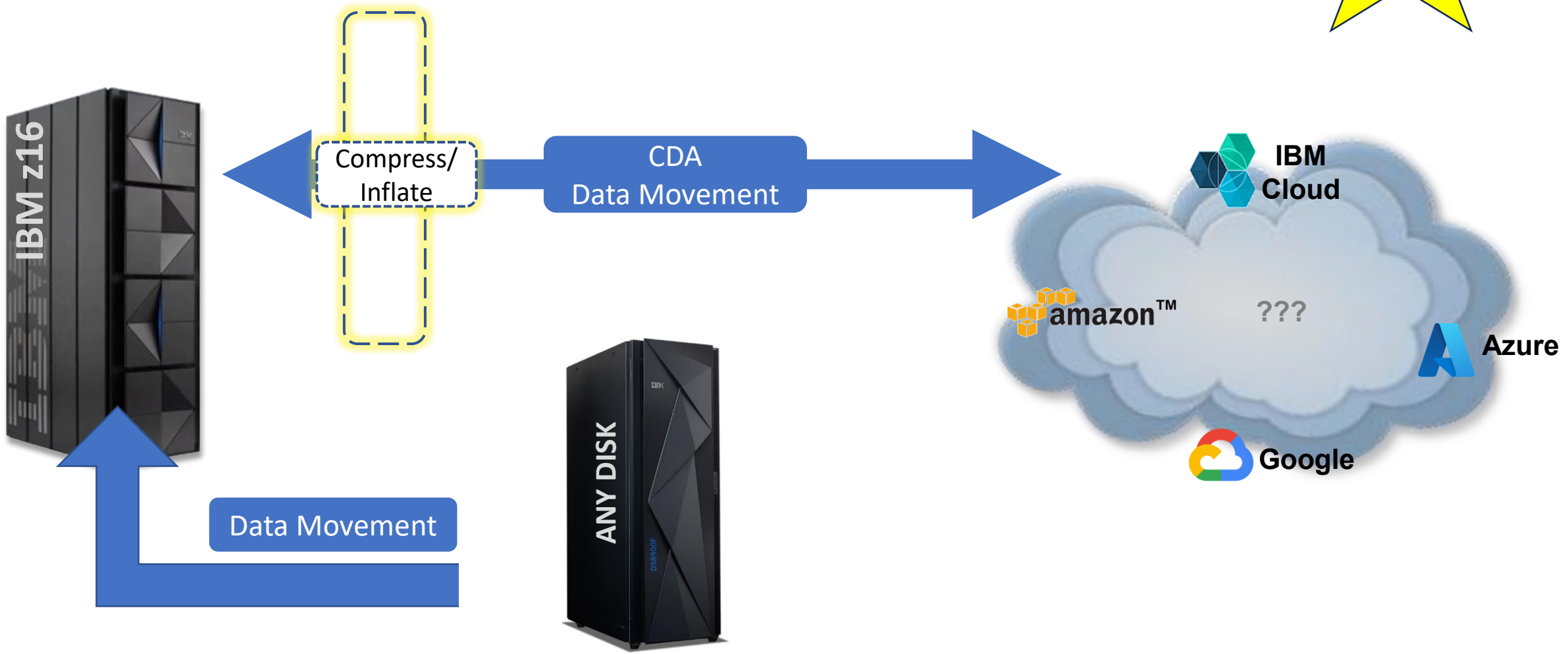
Overview – DSS cloud solutions (Direct)



S3 Interface Only – NOT TS7700
Traditional Data Path like DISK/TAPE backup

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Usage & Invocation - Dump

```
//STEPT01 EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DUMP FULL CLOUD(mycloud)  -
  CONTAINER(mycontainer) OBJPFX(myobjprefix)  -
  INDYNAM(C9SS01) –
  CDAPROVIDER
```

mycloud – Traditionally describes an SMS network connection.

CDAPROVIDERFILE – Tells us to look for a CDA provider file (mycloud.json) to obtain provider connection/tailoring details.

If json file not found, returns to default behavior looking for SMS network connection.

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Usage & Invocation – Dump compress

```
//STEPT01 EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DUMP FULL CLOUD(mycloud)  -
  CONTAINER(mycontainer) OBJPFX(myobjprefix)  -
  INDYNAM(C9SS01) –
  CDAPROVIDER  CDACOMPRESS
```

CDACOMPRESS – Requests that user data is compressed before sending to cloud object store.

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Usage & Invocation - Restore

```
//STEPT01 EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  RESTORE FULL CLOUD(mycloud)  -
  CONTAINER(mycontainer) OBJPFX(myobjprefix)  -
  OUTDYNAM(C9SS01) –
  CDAPROVIDER
```

mycloud – Traditionally describes an SMS network connection.

CDAPROVIDERFILE – Tells us to look for a CDA provider file (mycloud.json) to obtain provider connection/tailoring details.

If json file not found, returns to default behavior looking for SMS network connection.

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Usage & Invocation – Restore of Compressed Backup

```
//STEPT01 EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  RESTORE FULL CLOUD(mycloud)  -
  CONTAINER(mycontainer) OBJPFX(myobjprefix)  -
  OUTDYNAM(C9SS01) –
  CDAPROVIDER
```

No Keyword. DSS keeps record in backup meta-data.

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Usage & Invocation – CloudUtils

```
//STEPT01 EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  CLOUDUTILS LIST CLOUD(mycloud)  -
  CONTAINER(mycontainer) CDAPROVIDER
```

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Usage & Invocation – CDAPROVIDERFILE PATCH

ADRPATCH byte available to make CDAPROVIDERFILE the **DEFAULT**

- No need to specify CDAPROVIDERFILE
- No JCL updates needed
- ADRPTCHB x62

```
//*************************************************************/
//* SAMPLE JCL TO SET THE FLAGS IN ADRPATCH
//*************************************************************
//ZAP EXEC PGM=AMASPZAP,PARM='IGNIDRFULL'
//SYSPRINT DD SYSOUT=*
//SYSLIB DD DISP=SHR,DSN=LIBNAME.LINKLIB
//SYSIN DD *
 NAME ADRDSSU ADRPATCH
 VER 62 00
 REP 62 FF
```

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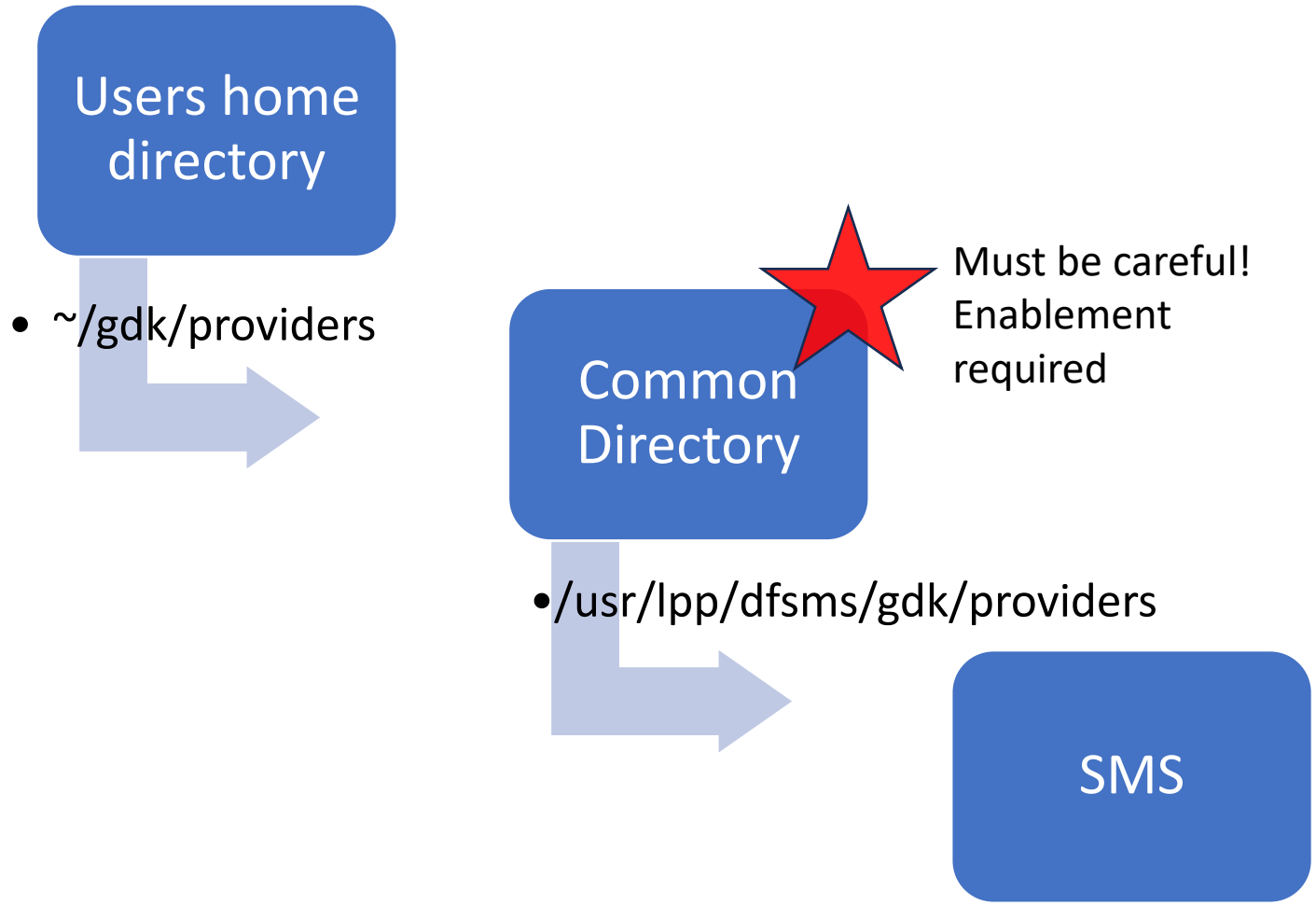
Usage & Invocation – Cloud connection information



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Usage & Invocation – Cloud provider file

```
{
"enableDFSMSdss": "YES",
"host": "s3.us-west-1.amazonaws.com",
"port": "443",
 "region": "us-standard",
 "httpMechanism": "HTTPS”,
 …
}
```

enableDFSMSdss: This key-value pair must be specified. Otherwise, file is **ignored**.

This is where users can *tune* the way their connection is used.
- More functionality to come.

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Usage & Invocation – Cloud provider file (cont).

```
{
"enableDFSMSdss": "YES",
"host": "s3.us-west-1.amazonaws.com",
"port": "443",
 "region": "us-standard",
 "httpMechanism": "HTTPS”,
tctType=‘TCT’,
 …
}
```

tctType. This tells DSS the type of TCT target (True cloud or TS7700 Cloud).

The absence of tctType tells us this is a DIRECT connection type.

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Interactions & Dependencies

- Software Dependencies
  - OA66536 – DFSMSdfp CDA Compression support.
  - OA66450 – DFSMSdss Direct to cloud support
  - OA67394 – DFSMSdss Direct to cloud Compression support
- Hardware Dependencies
  - None.
- Exploiters
  - Clients.

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Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level: **No**
- List any toleration/coexistence APARs/PTFs. **None**
- List anything that doesn't work the same anymore.
  - **Container name for DSS backups different than TCT:**
    - TCT (existing): SYSZADR.
    - Direct(new): SYSZADR-

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Installation & Configuration

- CDA requires some setup
  - Quick Guide: https://www.ibm.com/docs/en/zos/3.1.0?topic=configuration-system-administrator-quick-start
- CDA Credentials Storage:
  - https://www.ibm.com/docs/en/zos/3.1.0?topic=services-cloud-data-access-cloud-credential-storage
- Provider file configuration
  - Sample provider file for each provider type can be found in /usr/lpp/dfsms/gdk/samples/providers/
  - Field descriptions: https://www.ibm.com/docs/en/zos/3.1.0?topic=files-provider-file

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Summary

- DSS now offers two cloud solutions (TCT and Direct)
- CDAPROVIDERFILE keyword is used to identify the new support
  - JSON contents describes solution to use.
- CDACOMPRESS results in zEDC compression services.

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