

IBM Skunkworks Projects for z/OS

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DISCLAIMER...

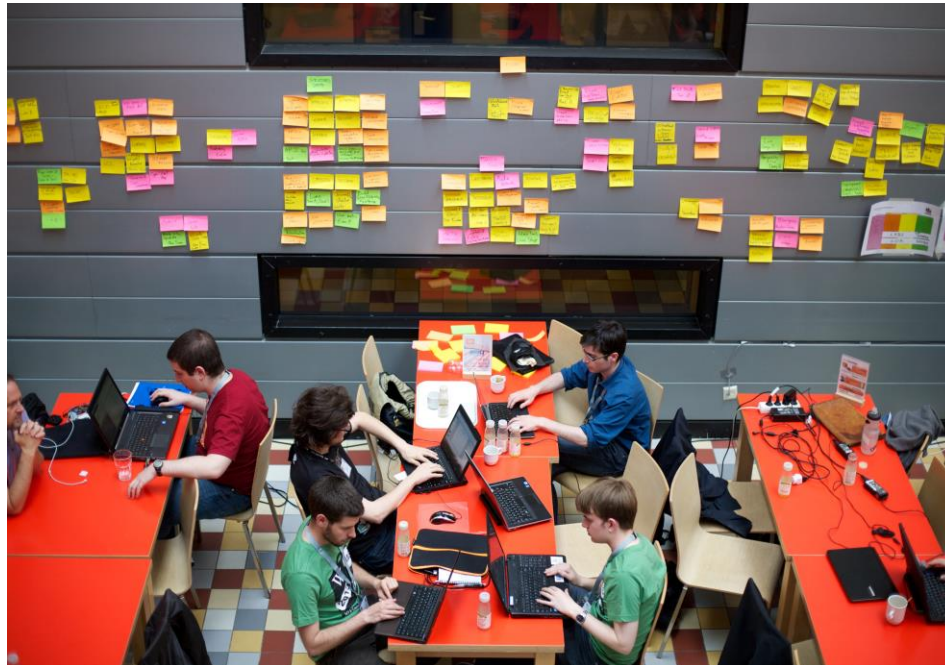
This presentation discusses potential IBM deliverables. Statements regarding IBM future direction and intent are subject to change or withdrawal, and represent goals and objectives only.

Agenda

- ATT Team Introduction
- Cool Demos!
 - Cloud Data Access
 - PGP
- Future

Z Systems Advanced Technology Team

Let's Innovate!!!



Z Systems Advanced technical Team

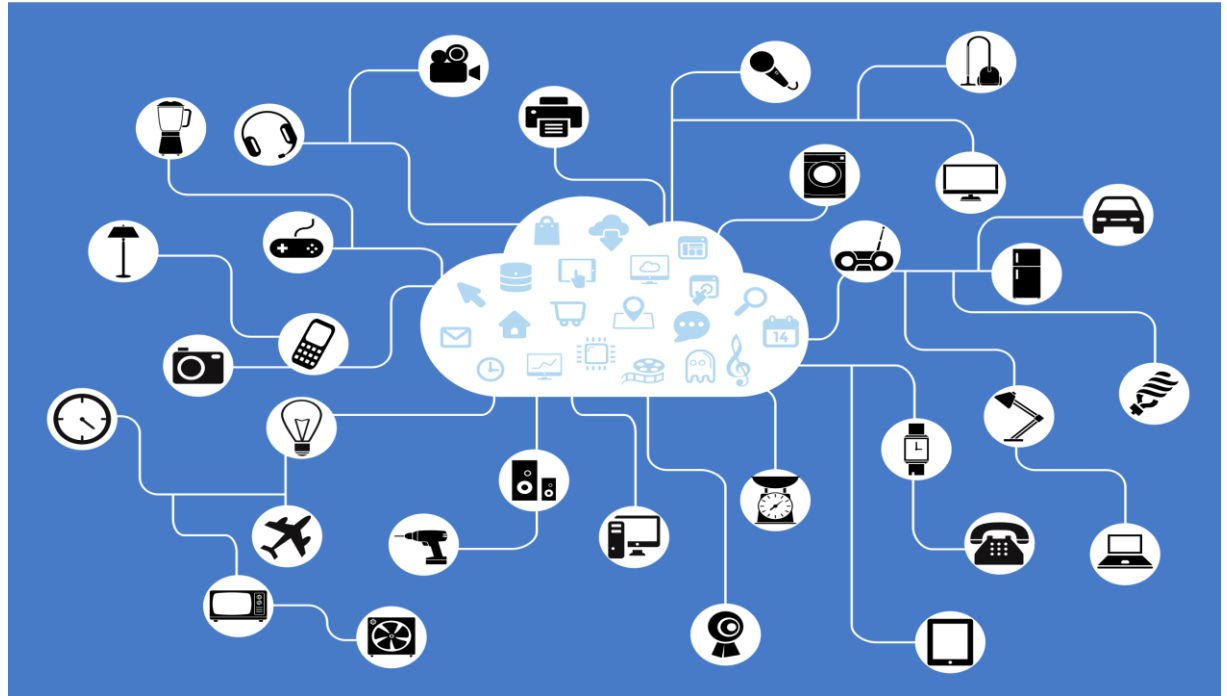
- **Mission:** A highly innovative team composed of cross-product software engineers working together to explore and discover new technology innovations through incubator projects for z Systems
 - ▶ Working close as an Agile team to investigate and assess new innovations for the z platform using new and future technologies
 - ▶ Creating demonstrations to show the huge opportunity and value of the z Platform
 - ▶ Working closely with stakeholders (internal and external) to gather feedback and direction on incubator projects
 - ▶ Collecting new ideas from both external customers and internal thought leaders on ways to utilize newer technologies on z



z/OS Cloud Data Access

Big Data is being stored in the Cloud at record amounts...

How do we use that data in conjunction with z/OS?



z/OS - Cloud Data Access (CDA)

Cloud Data Access: Allow z/OS applications to perform all of their cloud data through one simple interface - the ability to store and access big data on the cloud; allow big data to be consumed by cloud connector applications; provide a vehicle to back up data offline from z/OS

Use Cases

There are many use cases for the need to access cloud data (objects) from z/OS. Some of them are list here:

- ***Use Case 1 : Existing z/OS apps need to store large data at a lower cost.***
- ***Use Case 2: Existing Cloud deployed data from any platform will be accessible to z/OS.***
- ***Use Case 3: z/OS operating system will leverage cloud storage capability.***
- ***Use Case 4: Auto propagation of z/OS data to any cloud connected platform.***



Parts of z/OS CDA

- **CDA Cloud Data APIs**
 - CDAREAD, CDAWRITE, CDALIST, CDADEL, CDAGETP
- **CDA Key Access APIs**
 - Add Key, Delete Key, GetResources, Key Search
- **Extensible Cloud Framework**
 - JSON markup language for cloud providers

z/OS - Cloud Data Access

- DEMO...time for fun!!!

Security - What is PGP?

PGP



GPG^{TOOLS}



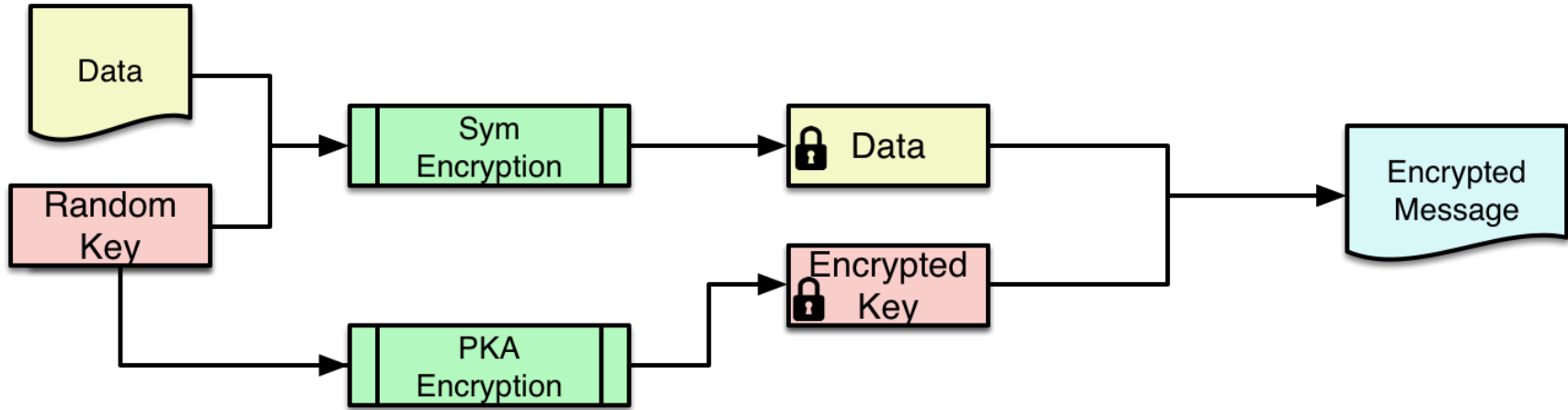
PGP Certificates

```
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: GnuPG v2.0.14 (MingW32)
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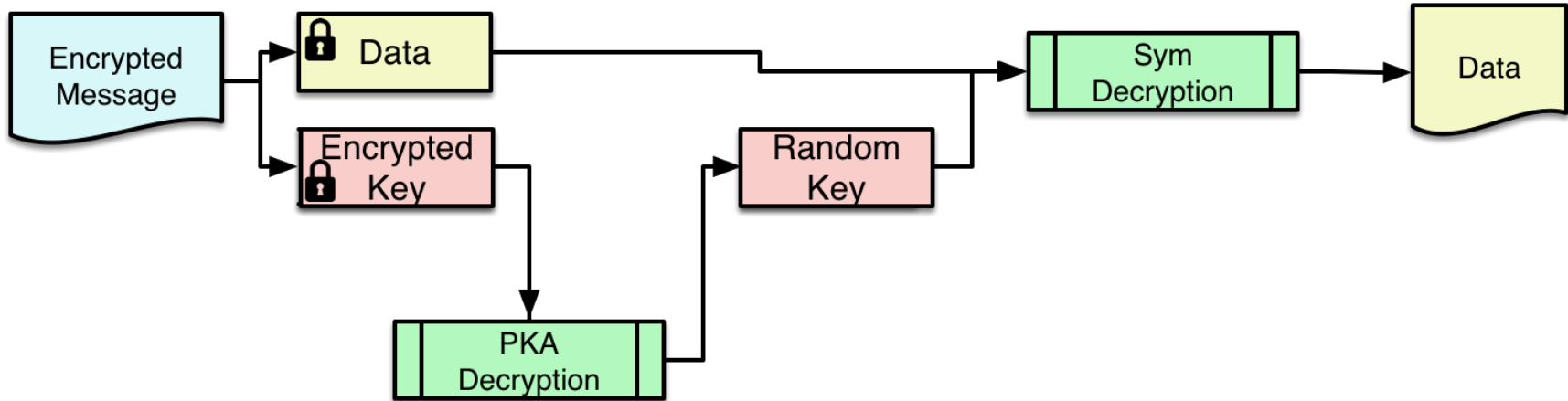
```
xo0EV8CKugEEAMQDdDrjozFp2BL01jzkkx+DAzztL90YvPk9wTOjMHliL51PGVj2IIIFSar00IB3tx
8BHeMICEhVKC/V1/QnQdLk+IZ5aCrUQXYnvwc64XUjRD3hZdmZDfac17E3+pivsyXtFsAVuRTvyO
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rUP6JhM16ZmYMstI4CAv6cWCKZqJ6tkdtMs4kLR+yVilkaTQzmcog8I3D47TnPYO81uv6hyxs12H
x61Vo9NGoBq+hE/Ai751kTTRbNFILQaQCWJFWGJ/q8t5FBqpd9c8z6hjXyoprFukRgAct817ww94
1TwWPw==
=Ksly
-----END PGP PUBLIC KEY BLOCK-----
```



PGP Flow - Encrypt



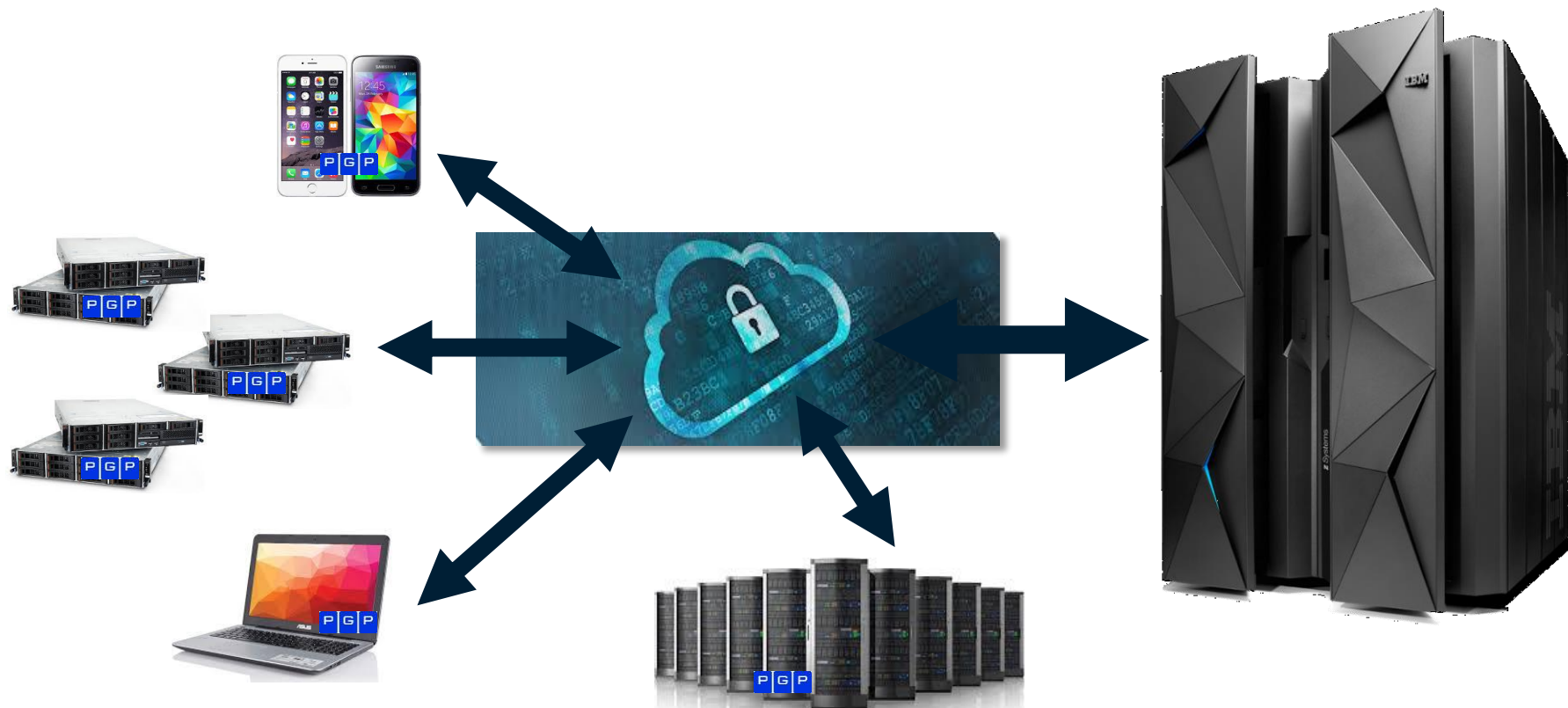
PGP Flow - Decrypt



State of EndPoint Security – Present



Best of Both Worlds



Enterprise Security



Introducing... Enterprise PGP



PGP



Conclusion

- EnterprisePGP is pretty cool, let's get the hype train rolling.
- Availability, deployment, service, how do we get this out to customers quickly and easily?
- Open to all feedback and suggestions, thanks!

Enterprise Security Stack



WAS Liberty
Hosts RESTful Crypto Service API's

jCCA Framework
Provides native Java interface to crypto services

RACF
Authentication and access control to crypto services and sensitive key material

ICSF
Interface to zOS crypto services and hardware

Z Systems ATT – Contact Info

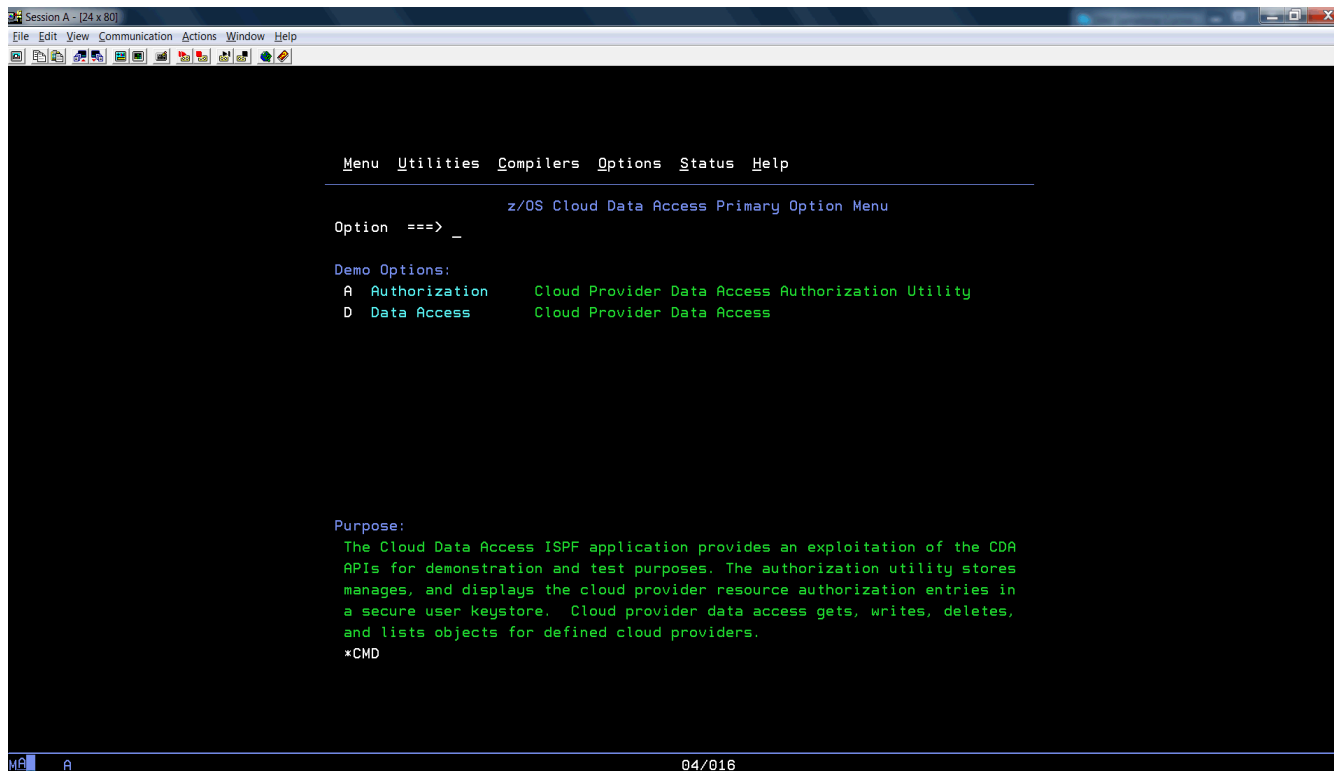
- Interested in being a stakeholder or working closely with our team on projects?
- Send email to: zidea@us.ibm.com

- Have an idea or technology you would like to see utilized for z?
- Send email to: zidea@us.ibm.com

- General questions: contact Maura Schoonmaker: mkt@us.ibm.com



Backup



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
-----
z/OS Cloud Data Access Primary Option Menu
Option ==> _

Demo Options:
A Authorization      Cloud Provider Data Access Authorization Utility
D Data Access        Cloud Provider Data Access

Purpose:
The Cloud Data Access ISPF application provides an exploitation of the CDA
APIs for demonstration and test purposes. The authorization utility stores
manages, and displays the cloud provider resource authorization entries in
a secure user keystore. Cloud provider data access gets, writes, deletes,
and lists objects for defined cloud providers.
*CMD

MR A 04/016
```

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
Cloud Provider Data Access Authorization Utility
Option ==> _
blank Display Resource Authorization List
S Save Resource Authorization
Select Cloud Provider:
_ 1.Swift
_ 2.S3
3.Dropbox
Authorization Parameters:
Enter "/" to filter display resource authorization list
/ Provider . . . Dropbox
Resource . . . /d/e/f
Key Value . . . swarren
Secret Key . . . *****
When the resource authorization list is displayed, enter:
"/" on the resource authorization list command field for the command
*CMD
M6 A 04/015
```

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
-----
RALIST - /u/tconti/cda/cdakeyf.json          Row 1 to 4 of 4
Command ==> _                               Scroll ==> HALF

Command - Enter "/" to select action          Provider
-----
/                                              Dropbox
/a/b/c                                         Dropbox
/d/e/f                                         Dropbox
/x/y/z                                         Dropbox
***** Bottom of data *****

*CMD

04/015
```

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
-----
                                Cloud Provider Data Access
Option ==> _

    blank Display Existing Object List      D Delete Existing Object
      C Create New Object                    E Edit Existing Object

Select Provider:
_ 1.Swift
_ 2.S3
  3.Dropbox

Cloud Object Parameters:
Provider . . . . Dropbox
Path . . . . . /
File . . . . . pindaric.txt

When the Object list is displayed, enter:
"/" on the Object data access list command field for the command
prompt pop-up.
*CMD

M6 A                                04/015
```



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      /u/tconti/cda/Dropbox.pindaric.txt      Columns 00001 00072
Command ==> _      Scroll ==> HALF
***** ***** Top of Data *****
000001 'Ruin seize thee, ruthless king!
000002 'Confusion on thy banners wait,
000003 'Though fanned by Conquest's crimson wing
000004 'They mock the air with idle state.
000005 'Helm nor hauberk's twisted mail,
000006 'Nor even thy virtues, tyrant, shall avail
000007 'To save thy secret soul from nightly fears,
000008 'From Cambria's curse, from Cambria's tears!'
000009 Such were the sounds, that o'er the crested pride
000010 Of the first Edward scattered wild dismay,
000011 As down the steep of Snowdon's shaggy side
000012 He wound with toilsome march his long array.
000013 Stout Gloucester stood aghast in speechless trance:
000014 'To arms!' cried Mortimer, and couched his quivering lance.
000015
000016 On a rock, whose haughty brow
000017 Frowns o'er old Conway's foaming flood,
000018 Robed in the sable garb of woe,
      *CMD
04/015
```

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help

Cloud Provider Data Access

Option ==> _ Replaced

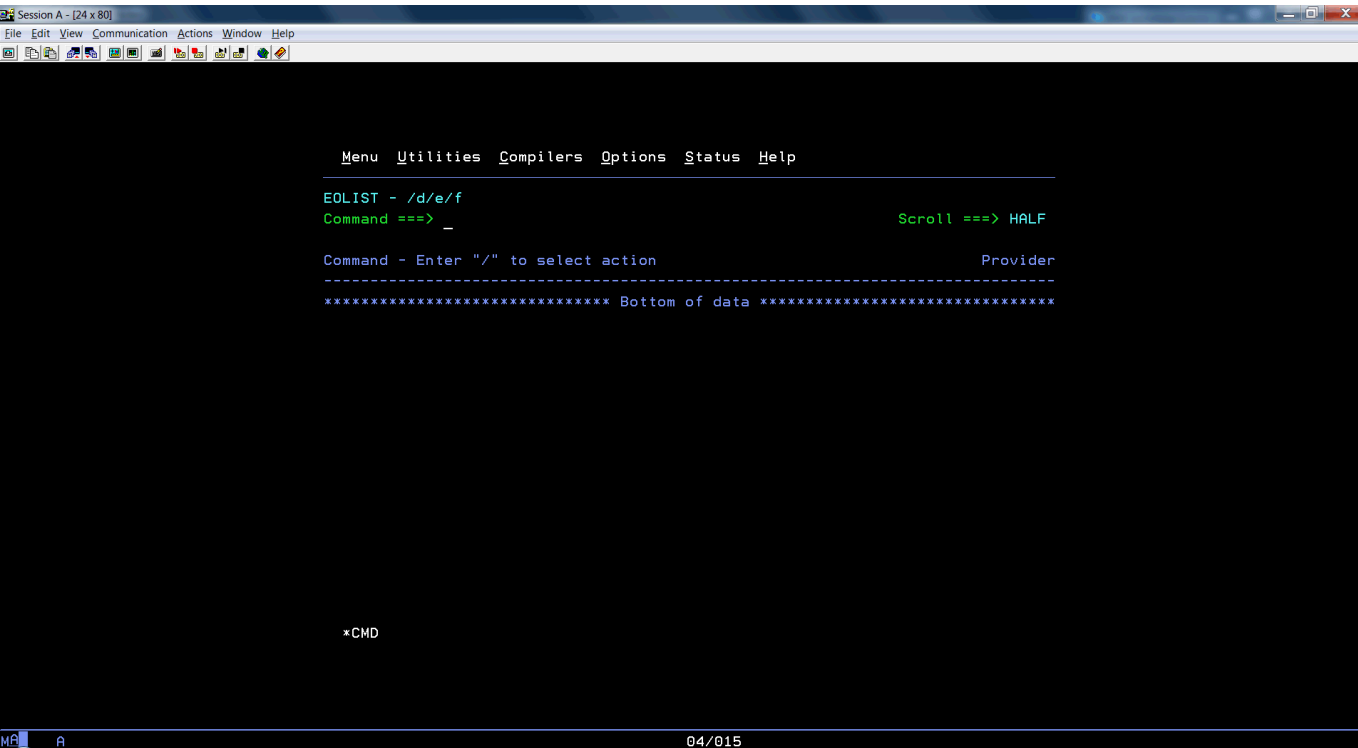
blank Display Existing Object List      D Delete Existing Object
C Create New Object                      E Edit Existing Object

Select Provider:
_ 1.Swift
_ 2.S3
3.Dropbox

Cloud Object Parameters:
Provider . . . . Dropbox
Path . . . . /
File . . . . pindaric.txt

When the Object list is displayed, enter:
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04/015
```



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
-----
EOLIST - /d/e/f
Command ==> _                               Scroll ==> HALF
Command - Enter "/" to select action          Provider
-----
***** Bottom of data *****

*CMD

04/015
```