



ADVANCED TECHNOLOGY GROUP (ATG)



Accelerate with ATG Webinar: GDPS 4.7 Update

David Petersen

IBM Distinguished Engineer

petersen@us.ibm.com



Accelerate with ATG Technical Webinar Series

Advanced Technology Group experts cover a variety of technical topics.

Audience: Clients who have or are considering acquiring IBM Storage solutions. Business Partners and IBMers are also welcome.

To automatically receive announcements of upcoming Accelerate with IBM Storage webinars, Clients, Business Partners and IBMers are welcome to send an email request to accelerate-join@hursley.ibm.com.



2024 Upcoming Webinars – Register Here!

[IBM FlashSystem's FlashCore Module 4 & Integrated Ransomware Threat Detection](#) – May 14th, 2024

[IBM Storage Ceph S3 Object Storage Deep Dive](#) – May 30th, 2024

Important Links to bookmark:



ATG Accelerate Site: <https://ibm.biz/BdSUFN>

ATG MediaCenter Channel: <https://ibm.biz/BdfEgQ>

Offerings

Client Technical Workshops

- **IBM DS8900F Advanced Functions:** May 8-9 in Chicago, IL
- **IBM Fusion & Ceph: A Deep Dive into Next Gen Storage:** May 15-16 in Chicago, IL
- **IBM FlashSystem Deep Dive & Advanced Functions:** May 22-23 in Atlanta, GA
- **IBM Cyber Resiliency with IBM Storage Defender:** June 5-6 in Tucson, AZ

TechZone Test Drive / Demo's

- IBM Storage Scale and Storage Scale System GUI
- IBM Storage Virtualize Test Drive
- IBM DS8900F Storage Management Test Drive
- Managing Copy Services on the DS8000 Using IBM Copy Services Manager Test Drive
- IBM DS8900F Safeguarded Copy (SGC) Test Drive
- IBM Cloud Object Storage Test Drive - (Appliance based)
- IBM Cloud Object Storage Test Drive - (VMware based)
- IBM Storage Protect Live Test Drive
- IBM Storage Ceph Test Drive - (VMware based)

Please reach out to your IBM Representative or Business Partner for more information.

***IMPORTANT* The ATG team serves clients and Business Partners in the Americas, concentrating on North America.**

Save the date

Storage @ IBM TechXchange Conference 2024

October 21-24, 2024

Mandalay Bay | Las Vegas
#IBMTechXchange

Key Learnings

- Practical how-to advice
- Patterns and best practices
- Success stories, IBM PoV, proven techniques

Featured Products

- IBM Storage Defender
- IBM Storage Fusion
- IBM Storage Scale + IBM Storage Ceph
- IBM Tape + IBM SAN
- IBM Storage FlashSystem + IBM Storage DS8000

Collaborate. Learn. Play.

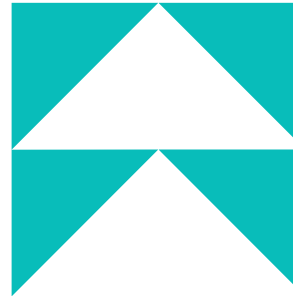
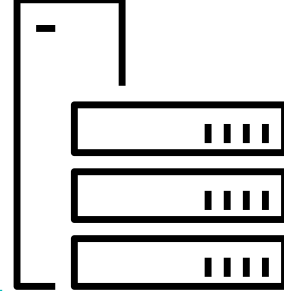
Community

- IBM Champions
- User Groups
- Tech Peers
- Business Partners



Sandbox

- Network
- Learn
- Collaborate
- Play

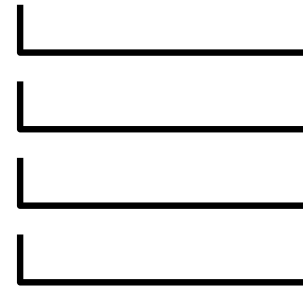
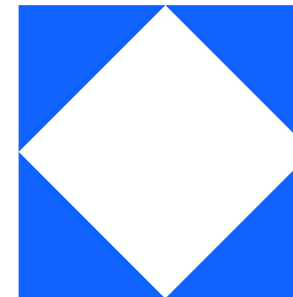


Accelerate your Career

- Labs (Instructor-Led, Self-paced)
- IBM Certification Testing
- Earn up to 25 hours in CPE credits

Breakout Sessions

- Trends and Directions
- User Groups
- Product Deep Dives
- Meet the Expert
- Professional Development
- Show the Code
- Birds of a Feather
- Academic/Research



Roadmaps

Go deep with people in the know and set the stage for where IBM is going in the future



<https://www.ibm.com/community/ibm-techxchange-conference/>

Game On!



Accelerate with ATG Survey

Please take a moment to share your feedback with our team!

You can access this 6-question survey via [Menti.com](https://www.menti.com) with code 1708 6924 or

Direct link <https://www.menti.com/alwhyze7z1gz>

Or

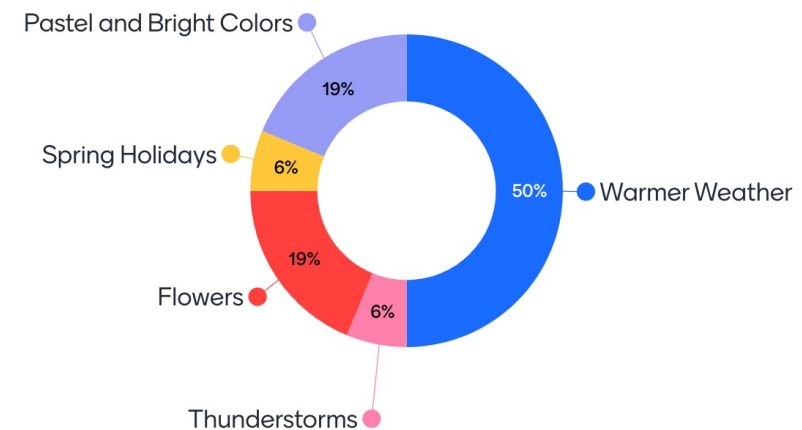
QR Code



Join at [menti.com](https://www.menti.com) | use code 1708 6924

 Mentimeter

FUN QUESTION: What is your favorite thing about spring?





ADVANCED TECHNOLOGY GROUP (ATG)



Accelerate with ATG Webinar: GDPS 4.7 Update

David Petersen

IBM Distinguished Engineer

petersen@us.ibm.com



Meet the Speakers



David Petersen – IBM Z, IBM Systems, 470 Springpark Place, Suite 1000A, Herdon, Virginia, United States of America (email: petersen@us.ibm.com). Mr. Petersen is an IBM Distinguished Engineer in the IBM Z platform. He has over 30 years of experience with IBM and responsible for the overall IBM Z Platform continuous availability, disaster recovery, and cyber resiliency strategy. David is the chief technologist / program manager of the GDPS continuous availability / disaster recovery / cyber resiliency solution, is responsible for the overall strategy, and leads the worldwide development organization. He has over 30 resiliency related patents. David is recognized throughout the IT industry as a resiliency expert.

Agenda

- GDPS Level-set
- GDPS 4.7 Update
- Summary



GDPS Level-set

IBM GDPS is installed in several of the largest enterprises in the world.

83% of the top **40** banks around-the-world use GDPS¹

Over **25** years of experience

+98% of the new GDPS deployments are with DS8K

Over **1200** licenses in **51** countries and dozens of references

2 MLOC in GDPS

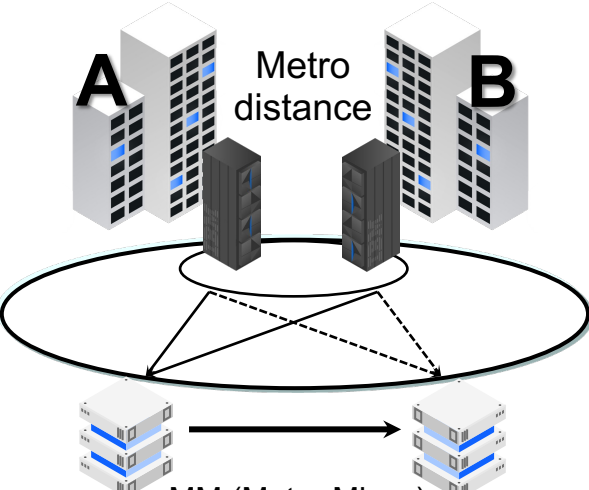
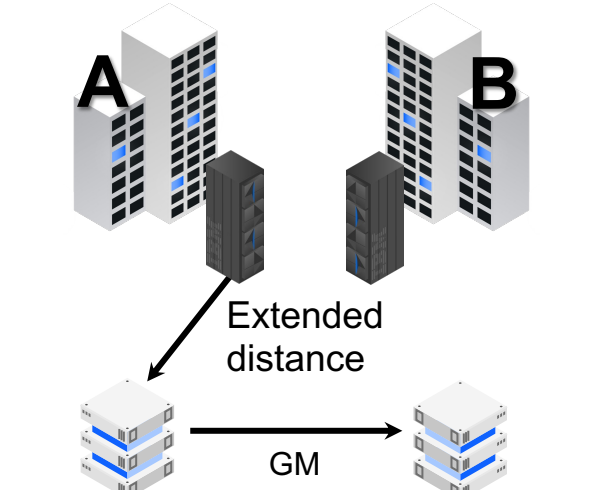
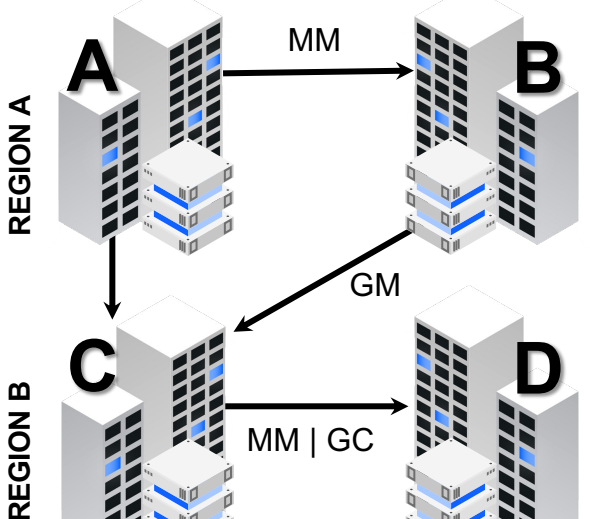
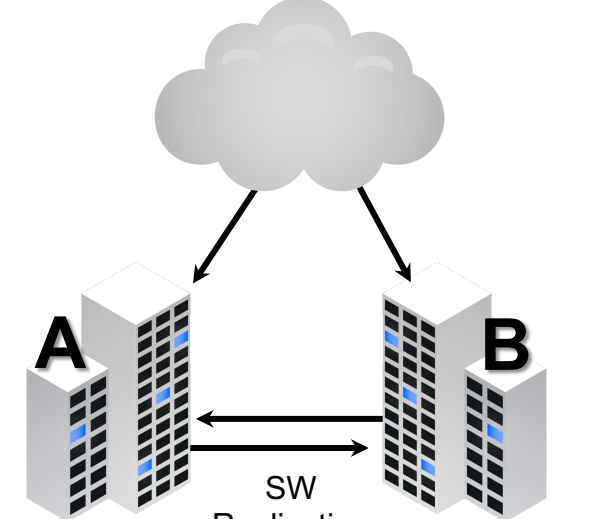
+50 people work on GDPS



¹Based on offering engagement data and the [The Top 50 Banks in the World](#) listing by relbanks.com, February 2016

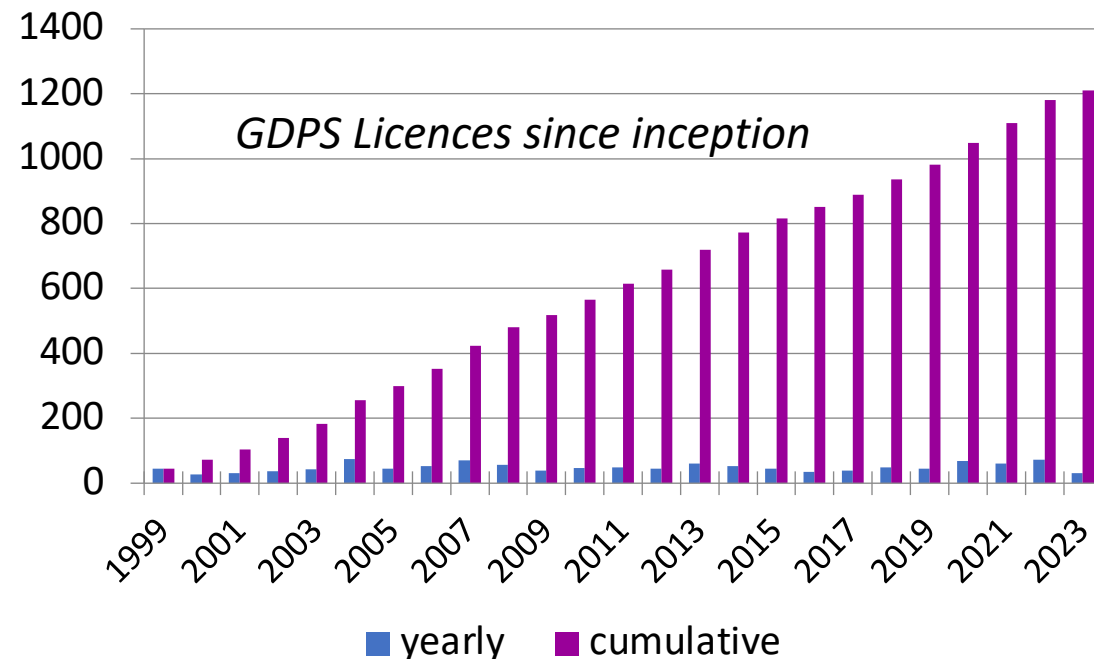
Balanced solutions designed to address different requirements



GDPS Metro	GDPS Global	GDPS Metro Global	GDPS Continuous Availability
<p>Near-continuous availability and recovery at metro distances</p>	<p>Disaster recovery at extended distance</p>	<p>Near-continuous availability regionally & recovery for 3-4 sites</p>	<p>Near-continuous availability, recovery & workload balancing</p>
<p>Systems remain active Multisite workloads can withstand site and storage failures</p>	<p>Rapid systems DR with “seconds” of data loss</p>	<p>Metro near-continuous availability and out of region disaster recover</p>	<p>Continuous availability at unlimited distances</p>
 <p>MM (Metro Mirror)</p>	 <p>GM</p>	 <p>MM, GM, MM GC</p>	 <p>SW Replication</p>
<p>RPO 0 & RTO <60 min © 2024 IBM Corporation</p>	<p>RPO 3-5 sec & RTO <60 min</p>	<p>RPO 3-5 sec & RTO <60 min</p>	<p>RPO 3-5 sec & RTO <60 sec</p>

GDPS License Demographics (year-end 2023)

- GDPS provides a complete solution for High Availability, Disaster Recovery and Cyber Resiliency in IBM Z environments
- Replication management, system management, automated workflows and deep integration with z/OS and parallel sysplex
- DS8000 provides significant benefits for GDPS users due to close cooperation between development team
- More than 1200 licences since inception
- Solid Multi Site Install base, and growing
- Significant traction for GDPS Logical Corruption Protection (LCP), providing automation, monitoring and management of Safeguarded copies with 87 features sold in 4 years



Multi site configuration	Environments	Customers
MGM3	116	65
MGM4	59	24

GDPS 4.7 Update

GDPS 4.7 General Points



Words matter initiative to remove wording that could be considered to be offensive, derogatory or demeaning

- Replacement of the term master with primary, or primary controlling system
- This change will impact some GDPS messages and hence the potential to affect local automation

z/OS 2.5 will be a pre-req for GDPS 4.7

GDPS ACTIVATE & LOAD in a single script statement is likely to be restricted at GA due to issues outside our control.

GDPS Online Docs

PDFs NOT available on FTP site for 4.7



- URL: <https://www.ibm.com/docs/en/gdps>
- Access for is restricted by email domain associated with your IBM ID
- Restricted just to the GDPS solution & features you are currently licensed for
- From the IBM Docs portal you can download a PDF should you wish to work that way
- One exception: XRC related pubs

GDPS 4.7 Summary including
content delivered by
continuous delivery since 4.6
became generally available

GDPS Metro Highlights – Summary

(and HM where appropriate)



- GDPS Security enhancements
 - Role-based security enhancements
 - New profiles for DASD panel and actions
 - New profiles for the xDR status panel and commands
 - New profiles for GDPS NetView commands
 - GEOSEC tool update for all RBS items listed above
 - New ‘Hardening your GDPS environment guidance’
 - Removing ability to issue NetView commands via the GUI
 - Removing access to NetView via 3270 interface
 - Enhanced coordination between GDPS and Support Element of IBM z16 to prevent disruptive SE operations during critical GDPS operations
 - Introduction of dynamic site table refresh from primary k-sys via GEOGROUP refresh panel
 - Filter for Control Scripts Option 6 – GDPS Planned actions
 - New script statement GDPS SYSPLEX ACTIVATE & LOAD
 - Enhancements to GDPS Link Management
 - Improved visualization in link query panel
 - Autonomous link reconfig (Start secondary enhancement)
 - Toleration for the new z/OS validated boot function made available on the IBM z16 by z/OS
 - Coordination of SRB IPL Boost and GDPS temporary capacity activate script statement
 - zIIP engines skipped if boost period is active during GDPS initialization until boost period is over
 - Out of sync track monitoring
 - RAS enhancements
 - For example, improved soft fence establishment in specific failure scenarios (freeze & stop)
 - New xDR script statement that can start a REXX program located on a z/VM host from the GDPS Controlling system
 - New ‘GD’ command for enhanced info in GEOPARM validation
 - Support for client supplied SSL/TLS ciphers to encrypt communication to the HMC for IDAA management.
 - XDR currency
 - RHEL 9 support for z/VM Proxy, KVM, and Linux in LPAR
 - Support for IDAA 7.5.12
 - TLS 1.3 support for IDAA for HMC connections
- XDR clients – be aware, SA MP 4.1.0.7 will not be supported after March 31st 2025. GDPS 4.5 will not be able to offer extended support for SUSE12 and RHEL7 beyond this date*

GDPS GM and MGM Highlights - Summary



- GDPS Security enhancements
 - Role-based security enhancements
 - New profiles for GDASD panel and actions
 - New profiles for GDPS NetView commands
 - GEOSEC tool update for all RBS items listed above
- Enhanced coordination between GDPS and Support Element of IBM z16 to prevent disruptive SE operations during critical GDPS operations
- Introduction of dynamic site table refresh from primary k-sys via GEOGROUP refresh panel
- Filter for Control Scripts Option 6 – GDPS Planned actions
- New script statement GDPS SYSPLEX ACTIVATE & LOAD
- Enhancements to GDPS Link Management
 - Improved visualization in link query panel
 - Dynamic PPRC link management
- Enhanced GDPS initialization
 - Message issued to indicate that GDASD scripts can be run
 - Reduces overall time for restart of GDPS and disk replication following planned shutdown of GDPS and stopping replication
 - Applicable for GM2SITE or MGMxSITE topologies
- Bi-Direction GM2SITE (inc region switch enhancements)
 - Session independence for switching regions
- Support for a NODASD configuration in GDPS GM.
 - Used when exploiting region switching without bi-directional support in the non-active Kg/Kr pair
- RAS Enhancements
 - For example, changes in START SECONDARY processing when used with MGMxSITE_MOVEGM in a multi-target MGM configuration

GDPS XRC and MzGM - Summary



- GDPS has been modified to not initialize in an z/OS V3.1 SDM/K-sys environment
- **GDPS 4.7 will be the final release to support XRC**

LCP Enhancements



- New dual control feature for enhanced security when making config changes and using flagset processing in edit mode
 - Pervasive changes only
- Role-based security enhancements
 - New profiles for individual fields in LCP Mgmt profile
- New topology support
 - MGM4SITE LCP Virtual Isolation in DR region
 - Includes region awareness
- SGC Retention Minimum and Automatic Release support.
- Support for FlashCopy to a SGC source device.
- Use LCP RESTORE to restore a direct FlashCopy from an FC or RC set of devices back to a target that is a Safeguarded source devices
- Performance enhancement for LCP Capture
 - Applicable for a MIPs constrained Metro LCP Mgr – external only GM2SITE
- LCP SAF 3270 standards change (color change and asterisk added to align with other GDPS panels)

CA Highlights



- Removal of AA Tower from GDPS CA Kpsys
- Change Master action on GDPS CA GUI replace with Change Primary
- Routing switch enhancements
- Role-based security for CA
 - Main Menu
 - Standard Actions

GDPS Metro and common enhancements

Dynamic site table refresh

Simplifying change management



Previous process:

With GDPS 4.6 there is a GDPSSITE REFRESH command that had to be run on each system individually to update the site table. HyperSwap is turned off whilst issuing the command on all systems.

New 4.7 process:

New site table management process is fully integrated in the config panels and process in GDPS via a new site table management panel.

HyperSwap is disabled for the shortest possible time (few seconds) to avoid a HyperSwap occurring when the information about systems is inconsistent. During this short period of time, the data consistency remains protected by the freeze capability.

You can now update your site table with less disruption and risk.

```
VPCPSREC                               Site table management                               GBC2

Select one of the following:

TS          Test      Site table
RS          Refresh   Site table
```

PH34365 NF - ENHANCE GDPS LINK MANAGEMENT/AWARENESS



Improved panel to display Link status across all the GDPS solutions

Highlighting what is expected or not by GDPS

This provides the user the opportunity to identify links that are “not found” (note: “not found” means “expected by GDPS but not found as defined in this PPRC Path)

If multiple secondary subsystems were found, it will give you information about them, such as whether part of this GDPS and which leg it is associated with.

Synergy with Dynamic PPRC Link Management function:

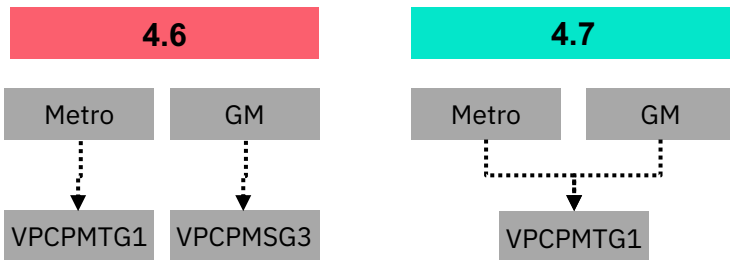
- Green:** Expected and found
- White:** Expected link not found
- Turquoise:** Unexpected links

```

VPCPMTG1                                     PPRC Paths                                     BZK1
Primary: 00LHV51 DSS33                       LSS: 25   SSID: 7325   WWNN: 500507630AFFD3B2
Secondary.1                                   Secondary.2
  Serial 00LHV31 DSS13                       00LHV41 DSS23
  LSS SSID 23 5123                             24 6224
  WWNN 500507630AFFD3B0                       500507630AFFD3B1
  Leg  RL2                                       RL3
Links 01020001-13                             00330330-13
      02020101-13                             01330030-13
      03020201-13                             02330130-13
      01230123-                               03330230-13
      00020301-13*
    
```

F1=Help F3=Return F7=Up F8=Down F10=Left F11=Right

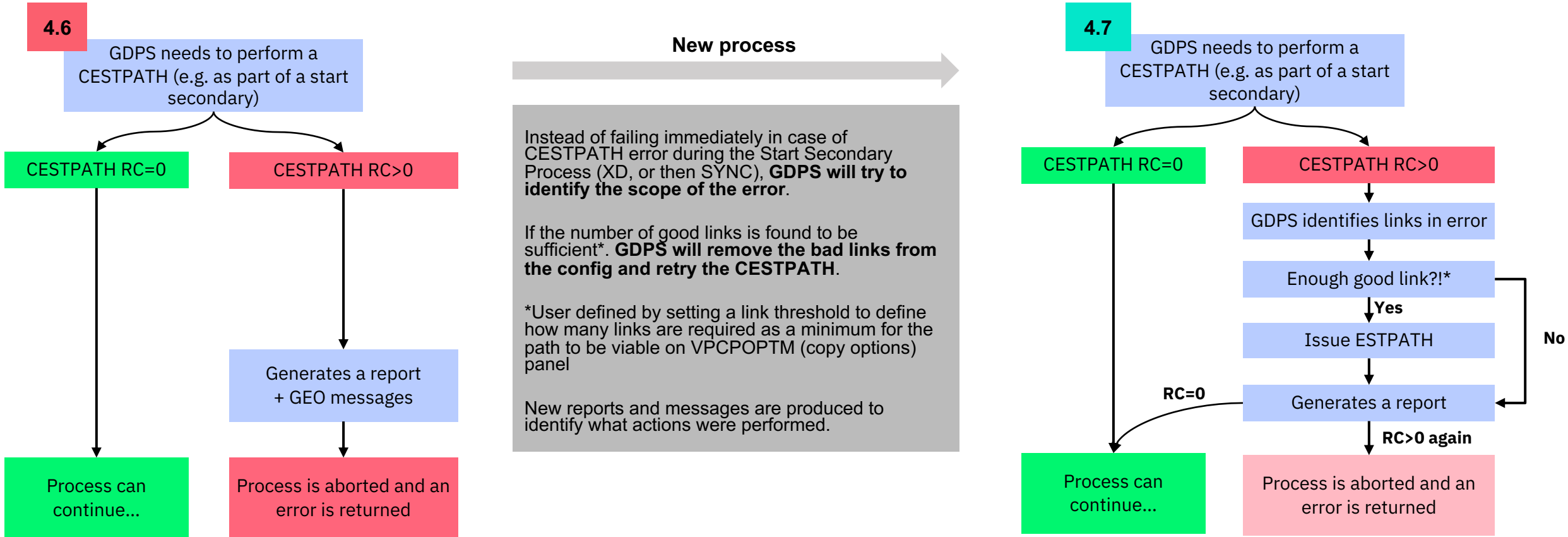
Unifying panel between Metro & GM



PH22312 Autonomous Link Reconfiguration (Metro specific)



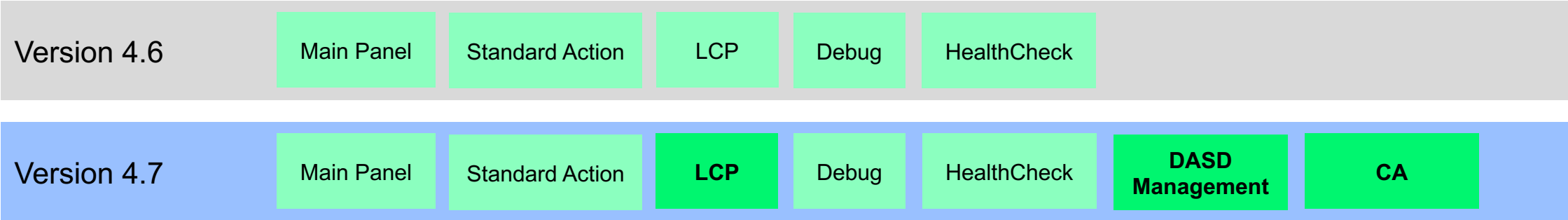
Automatically resolving path in error during Start Secondary by removing bad links



NOTE: This capability is not activated by default with the link threshold is set to zero

GDPS Role Based Security for GM & Metro

Feature that can be secured by Role Based Security per release



Metro & GM
GDPS is now protecting DASD Remote copy panels and all the actions associated
Examples:
Deleting pairs & paths
Visualizing DASD remote copy panel
Restarting the replication
Granularity:
1. View commands (View, Query, etc)
2. Action commands (EstPath, EstPair, etc)
3. Policy commands (Changing policy options)

LCP
New: we can now protect each individual characteristic of the management profile.

E.g. Retention period, Automatic release, Reservation time, Copy sets, FlashCopy Mode...

CA
GDPS is now protecting:
Main Menu options
Standard Actions



RFE 152769 Provide Filter for Control Scripts

Filter/exclude by script name, content or status

Use F9 to locate next iteration of a searched criteria from current panel information displayed
Easily navigate to the top or bottom of the panel using top/bot commands respectively

Filter available: filter name(*name*), filter content(*content*), filter status(*status*)

Exclude available: exclude name(*name*), exclude content(*content*), exclude status(*status*)

Short form of the commands are available e.g. filter name = fn etc

```
Filter by name:
fn(start)

VPCPFUS2          Planned Actions          BZK1

Actions:  V iew  X ecute

Script Name      Script Header
-----
- STARTSEC       START SECONDARY WITHOUT FLASHCOPY
- STARTSECFC     START SECONDARY WITH FLASHCOPY
- STARTSECPREFCG START SECONDARY PREF CG
- STARTSECRL1    START SECONDARY RL1
- STARTSECRL2    START SECONDARY RL2
- STARTSECRL3    START SECONDARY RL3
- STARTSECRL3CG  START SECONDARY RL3 CG
- STARTSECXDR1   START SECONDARY XD

1 Script management      2 View batch scripts      3 View takeover script
Command/Filter ==>
F1=Help  F3=Return  F6=Roll  F7=Up  F8=Down  F9=Locate
*Row 1 of 8
```

```
Filter by content:
fc(hypersw)

VPCPFUS1          Planned Actions          GBC2

Actions:  V iew  X ecute

Script Name      Script Header
-----
- GOHOME_RS1_FAILURE_S2 GO HOME AFTER SITE1 FAILURE S2
- HS_ACLOCKWISE     HYPERSWAP ANTI-CLOCKWISE
- HS_CLOCKWISE      HYPERSWAP CLOCKWISE
- HS_NONPREF1       HYPERSWAP NONPREF
- HS_NONPREF2       HYPERSWAP NONPREF
- HS_PREF_RESYNC    HYPERSWAP PREFERRED RESYNC
- HS_PREFERRED       HYPERSWAP PREFERRED
- HS_RS1_RL1        HYPERSWAP RS1_RL1
- HS_RS1_RL1_FLASH  HYPERSWAP RS1_RL1
- HS_RS1_RL1_NOSTRTSEC HYPERSWAP RS1_RL1
- HS_RS1_RL2        HYPERSWAP RS1_RL2
- HS_RS1_RL2_FLASH  HYPERSWAP RS1_RL2
- HS_RS1_RL2_NOSTRTSEC HYPERSWAP RS1_RL2
- HS_RS2_RL1        HYPERSWAP RS2_RL1
- HS_RS2_RL1_FLASH  HYPERSWAP RS2_RL1

1 Script management      2 View batch scripts      3 View takeover script
Command/Filter ==>
F1=Help  F3=Return  F6=Roll  F7=Up  F8=Down  F9=Locate
*Row 1 of 30
```

Improved CPC Operation panel

```

4.6 VPCSPM1                               Sysplex Resource Management                               AZK2
     Actions: V iew   M odify                               CTNID: STOSE1
                                                         CTS: STOSE1
     ----- Couple Datasets -----
     TYPE      Primary DSN                Alternate DSN
     _  SYSPLEX  SYS1.A0GDPS.SYSPLEX.CDS1RS1  SYS1.A0GDPS.SYSPLEX.CDS1RS2
  
```

```

4.6 VPCPCOPS                               CPC Operations                               AZK2

Line commands:  S SE operations  Q Query  C CAPACITY  R RECORDS
                                                         Status -
     CPC Name SE Session CPC Status  CBU Status CoD Status C STP Query Time
     _  ST01   CONNECTED  OPERATING  INSTALLED  INSTALLED  Y PTS 26 Jan 11:59
  
```

4.6: CTNID & time management information is spread across Sysplex Resource management (VPCSPM1) and CPC Operations panel (VPCPCOPS)

- 4.7: Information is now centralized in the CPC Operations panel
- + Improve help panels
 - + Improve display for uncommon status that would not fit in the panel
 - + Slightly change header to ease readability

```

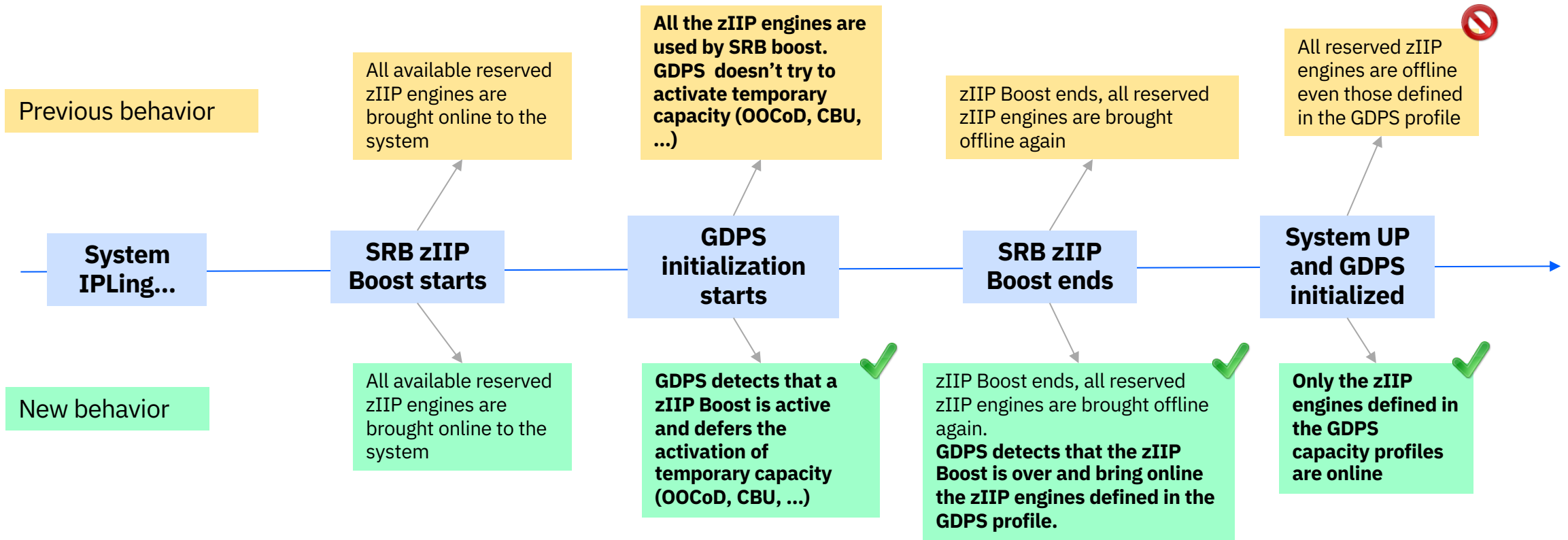
VPCPCOPS                               CPC Operations                               AZK2
                                                         CTNID: STOSE1
Actions:  S SE operations  Q Query  C CAPACITY  R RECORDS
     CPC_Name SE_Session  CPC_Status  CBU      CoD      CTS STP Query_Time
     _  ST01   CONNECTED  OPERATING  INSTALLED  INSTALLED  Y PTS 26 Jan 13:39
  
```

GDPS/SRB coordination (Metro specific)



Improved coordination between GDPS & System Recovery Boost

GDPS will better coordinate zIIP engine activation even if we have the presence of a SRB IPL boost during the initialization of the system.



Out-of-Sync Tracks Report (Metro specific)



```

VPCPQSTE                               LSS Pair Replication Status                               FZK2
Mirroring Status: OK                    Group: F0GDPS00.CKD                               Type: CKD
Primary Site: ST0.ST01 (RS1)            Soft Fenced: NONE                               Monitor2 Time: 01:00:00
Actions: Q ueryPath Z QueryReverse V iew devices X ce
      D elpath E stpath
Leg: RL1      LSSs: 3      Pairs: 53
  Primary    ->    Secondary    PRI  -  SEC
  Serial LSS SSID    Serial LSS SSID    Util. Devices
_ 00LHV31 57 5157 -> 00LHV41 58 6258    05470 - 06470
_ 00LHV31 E6 D1E6 -> 00LHV41 E7 D2E7    0D400 - 1D400
_ 00LHV31 E7 D1E7 -> 00LHV41 E8 D2E8    0D43F - 1D43F

1 Epair 2 Dpair 3 Suspend 4 OOS-Mon 5 Monitor2 6 Q
7 Epath 8 Dpath 31 DSS List
Selection ==>
F1=Help F3=Return F4=Find F5=Refresh F6=Roll F7=Up
    
```

Monitor the out-of-sync statistics for a Metro replication leg making it easy to view mirror status from a CG level down to a volume level

VPCPLCS9
Out-Of-Sync Tracks Report
FZK2

Consistency Group: **F0GDPS00**

Replication Site: **1**

Total Volumes: **53**

Pending Volumes: **53**

Suspended Volumes: **0**

Actions: **Q uery**

Percentage Copied: **34.085**

Total Tracks: **11,803,050**

Tracks To Copy: **7,780,013**

UCB	Volser	RS1-Primary	RS2-Secondary	Copy State	Pct	Tracks	To Copy
-	05471	RESPF1 00LHV31.57.01	00LHV41.58.01	Pri-Pending	079	00491400	00103194
-	05472	CATPF1 00LHV31.57.02	00LHV41.58.02	Pri-Pending	068	00491400	00157248
-	05473	ZFSPF1 00LHV31.57.03	00LHV41.58.03	Pri-Pending	082	00491400	00088452
-	05474	PAGPF1 00LHV31.57.04	00LHV41.58.04	Pri-Pending	081	00491400	00093366
-	05475	RESPF2 00LHV31.57.05	00LHV41.58.05	Pri-Pending	073	00491400	00132678
-	05476	RESPF3 00LHV31.57.06	00LHV41.58.06	Pri-Pending	073	00491400	00132678
-	05477	PRDPF1 00LHV31.57.07	00LHV41.58.07	Pri-Pending	078	00491400	00108108
-	05478	SYSPF1 00LHV31.57.08	00LHV41.58.08	Pri-Pending	083	00491400	00083538
-	05479	SYSPF2 00LHV31.57.09	00LHV41.58.09	Pri-Pending	069	00491400	00152334
-	0547A	USRPF1 00LHV31.57.0A	00LHV41.58.0A	Pri-Pending	075	00491400	00122850

Command/Filter ==>
Row 1 of 53

F1=Help
F3=Return
F5=Refresh
F6=Roll
F7=Up
F8=Down

Enhanced coordination between GDPS and Support Element of IBM z16



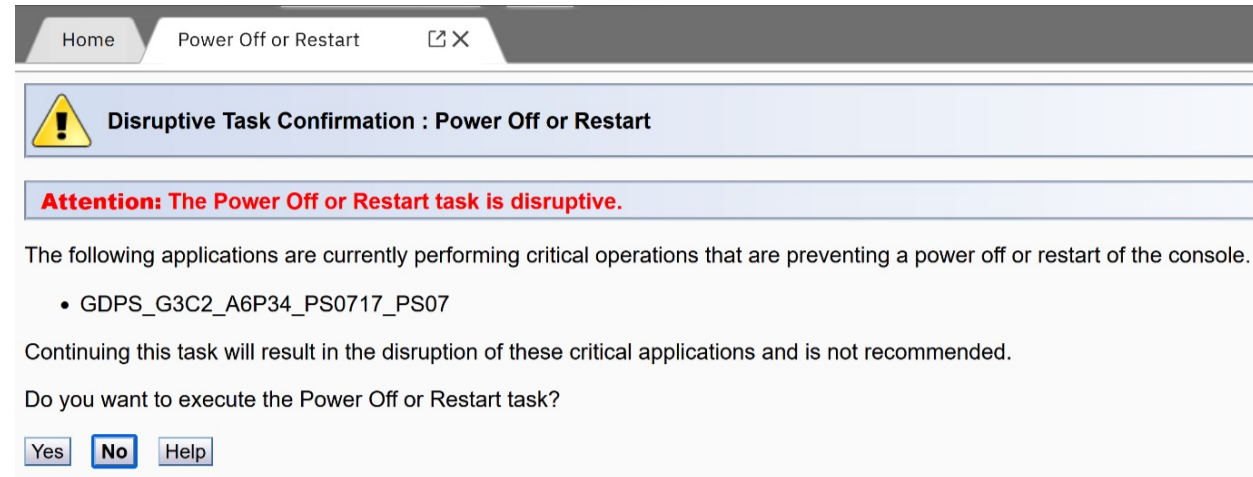
Phase1: GDPS is aware of the SE availability. SA will trap SE suspension event (ING830I) and GDPS will react and internally set a status to HOLD.

Until this status is cleared, GDPS will not let the user attempt any action on this SE (Activate, Load, ...) that would fail.

```
VPCPCOPS                CPC Operations
Actions:  S SE operations  Q Query    C Capacity  R Recor
CPC_Name SE_Session  CPC_Status  CBU         CoD
_ PS01     HOLD           OPERATING   INSTALLED   INSTALLED
_ PS07     CONNECTED      OPERATING   INSTALLED   INSTALLED
_ P13C     CONNECTED      OPERATING
```

Phase2: Prior to starting an action on an SE (LOAD system, ...), GDPS will generate the required command to tell the SE that an action is ongoing to prevent SE suspension.

If someone is trying to shutdown the SE from the HMC, they will see a new warning message.



Activate & Load

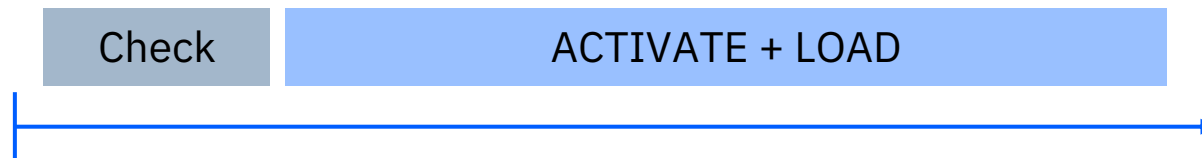
Previous process: Each step will have its own preparation phase (set BCPii filter...)

```
<script type="control" name="ACT_THEN_LOAD_1" >
  <step type="sysplex" value="ACTIVATE SYSTEM(GxP1)"> </step>
  <step type="sysplex" value="LOAD SYSTEM(GxP1)"> </step>
</script>
```



New process: Some steps are combined and do not need to be repeated between actions. Activate & Load are requested within a single request to BCPii.

```
<script type="control" name="ACT_THEN_LOAD_1" >
  <step type="sysplex" value="ACTIVATE SYSTEM(GxP1) LOAD()"></step>
</script>
```



Two actions within a single statement

xDR - Get Device Information – GD (Metro specific)



A new command is provided to display the devices associated with a given primary xDR proxy system (the one in yellow!)

Enter GD next to a primary xDR Proxy node to display devices range information associated with this Proxy

```
VPCPSTDL xDR status panel System: M53      Receive: OK Dispatch OK G7C2
Actions:  S Stop  T Start  E Erase  Q Query  MM Start FM Finish maintenance
          GS Get xdrstatus  CL Collect xdrlogs  R Restart L list /tmp
          GD Get mirrored devices

Site/Cluster/Node name      St/T  Hi  HIM FS  Lact
Site1
  proxyM53                  A      10  60
  proxy53B                   A LP      2  Qssiinfo 14:19:50 240417
  proxy53A                   A LP      1  InitNull 14:19:35 240417
Site2
  OK
```

Cluster/Node View selected

Cmd ==>

F1=Help F3=Return F5=Refresh F6=Roll F7=Up F8=Down F9=SSI F11=Right

xDR - Get Cluster Information – GC (Metro specific)



GC output shows which systems/clusters have these devices defined.

These commands can help you ensure the GEOPARM is set up correctly with the right systems having the correct devices defined.

```

MPCPFNG List all mirrored device Pairs for system M53
G7C2

Device Pair Range System Proxy cluster name
0A500 0A100 96 M51 proxyM51
0A500 0A100 96 M52 proxyM52
0A500 0A100 96 M53 proxyM53
0A500 0A100 96 M54 proxyM54

F1=HELP F3=Return F6=Roll
```

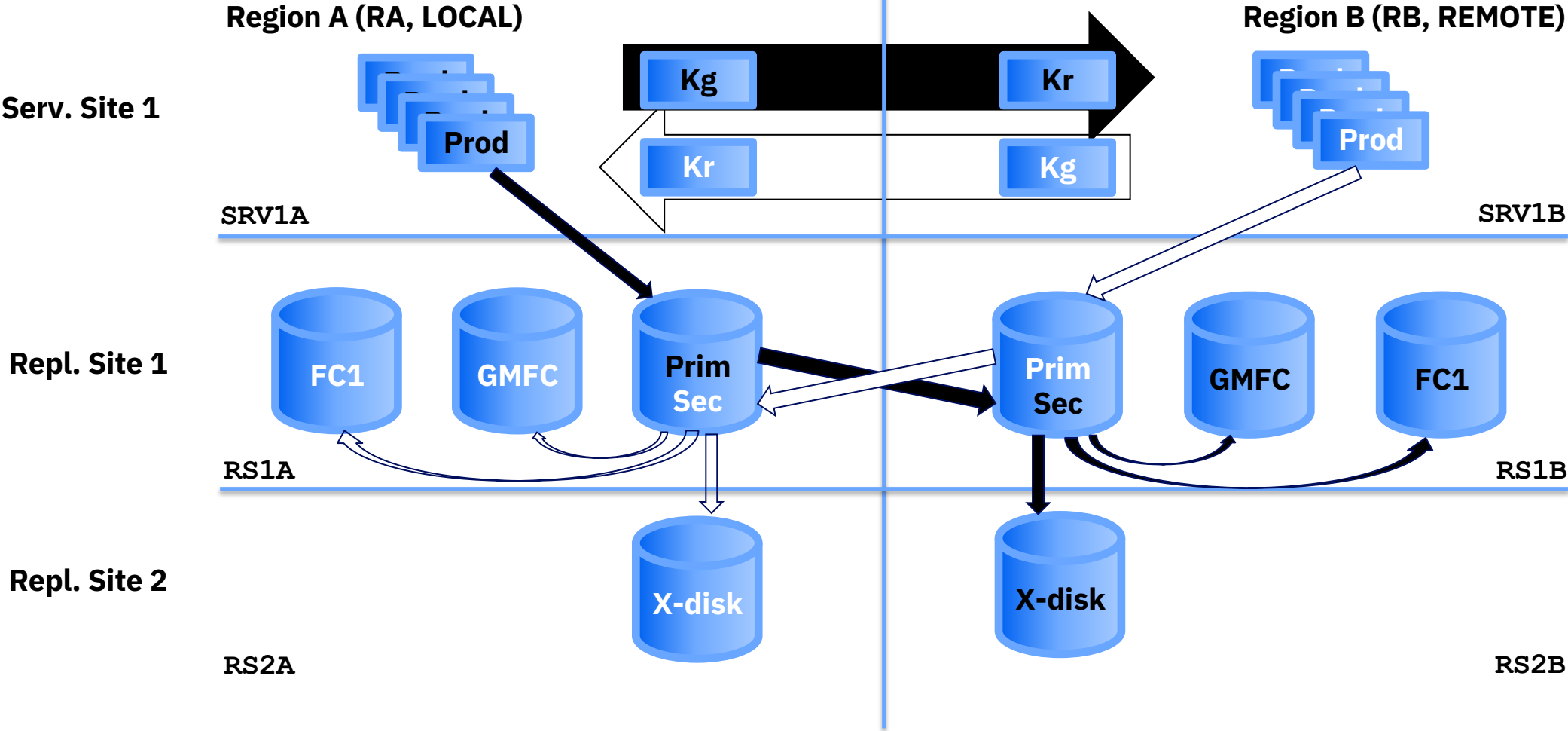
Bi-Directional GDPS Global
GM 2-Site support and other
GM/MGM specific items

Bidirectional GDPS Global – GM 2-site



- Builds on region switch capable GDPS GM 2-site
- Consolidated XML GEOPARM for both directions
- Consolidated XML GEOGROUP with all systems in the same group
- Allows the Kg/Kr pairs for both directions to operate simultaneously
 - Kg A->B and Kr B->A are expected to be co-resident in the same z/OS
- Allows multiple GM sessions to switch direction independently
- Region switch using Procedure Handler

Bidirectional GDPS Global – GM 2-site



New Region Switch procedure



- GM2SITE_SWITCH procedure is provided to perform a planned region switch of one session to reverse the direction of replication when you want to run production from your other region. The script is run on the current production Kg-sys
- Syntax: PROCEDURE = 'sessname/sessname GM2SITE_SWITCH PROMPT|NOPROMPT'
- The procedure carries out the following actions:
 - Checks the status of current replication and that the session is running
 - If PROMPT is specified, issue a WTOR to confirm production systems are down
 - Resynchronizes the CopyOnce volumes if present
 - Pauses the current GM session in a consistent state
 - Cleans up the current GM session
 - Establishes paths in the opposite direction
 - Establishes Global Copy in the opposite direction
 - Monitor for zero tracks outstanding (should be the case)
 - Suspend Global Copy for the CopyOnce volumes
 - Issue a message to indicate production can be started in the new production region
- The procedure should be followed by a GDASD sessname INITIALIZE script statement to restart Global Mirror either before or after production is restarted depending on your policy for failing back (if needed)



Dynamic PPRC Link management for GM & MGM

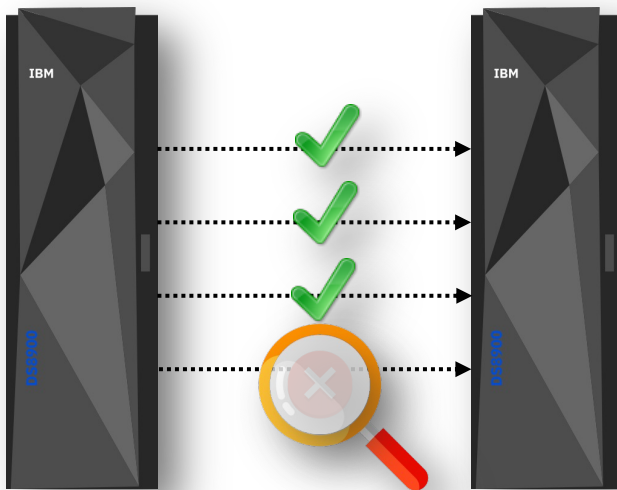
Temporary add or remove link from your configuration during maintenance or unplanned event.

Better visualize the current state of all your links.

Alter the link configuration without touching to the GEOPARM file.

Identify unexpected links.

Manage B2C, A2C and testcopy relationships (when available)



```

VPCPQMTV          PPRC Link Config Management          MVS2
Actions: D etail  R emove  A dd  C hange
Group: $PROD.CKD          Leg: RL1          Links: All: 9   Except: 3   Upd: 0

      Primary          Secondary  Pth  Lnk  Flags          Scope: All
      Serial  SAID    Serial  SAID  Cnt  Sta  CGB.. Description
- 00LHV31 0000 00LHV41 0103 011 13 111.. Permanent link
- 00LHV31 0100 00LHV41 0203 011 13 111.. Permanent link
- 00LHV31 0200 00LHV41 0303 011 13 111.. Permanent link
- 00LHV31 0040 00LHV41 014 011* 13 000.. Link not managed by GDPS
- 00LHV41 0103 00LHV31 0000 011 13 111.. Permanent link
- 00LHV41 0203 00LHV31 0100 011 13 111.. Permanent link
- 00LHV41 0303 00LHV31 0200 011 13 111.. Permanent link
- 00LHV41 0003 00LHV31 0300 011 00 110.. Permanent link - Not established
- 00LHV41 0143 00LHV31 0040 011* 13 000.. Link not managed by GDPS

1 All 2 Exception 3 Updated
Selection/Filter ==> _
F1=Help F3=Return
Row 1 of 9
  
```


GDPS LCP Manager enhancements

Dual Control



Potentially destructive actions will require additional authorization before they are executed

Only a subset of users will be granted “approver” access to be able to reject or approve these pervasive actions

This model will first be rolled out on our Logical Corruption Protection feature and offer further security of FlashCopy and Safeguarded copy management profiles

Fulfils the “IBM intends to further extend the security in GDPS by providing dual control model for pervasive or potentially destructive actions in the GDPS LCP Manager plus finer grained security controls on the LCP Management Profiles” – Statement of Direction



Dual Control - Examples



Creating a management profile – A user defines a new profile, and the parameters must be verified before creation

Modifying a management profile – A user wants to make a change to an existing profile and the update must be approved by another user to validate the reason and type of change

Deleting a management profile – A user wants to completely remove a management profile from LCP and before this removal occurs, another user must validate that this is a safe action to take

Flagset in EDIT mode – A user wants to include or exclude a volume from the next capture process. Another user must first verify that this action wouldn't leave out any important copies of data from the next capture before approving this action

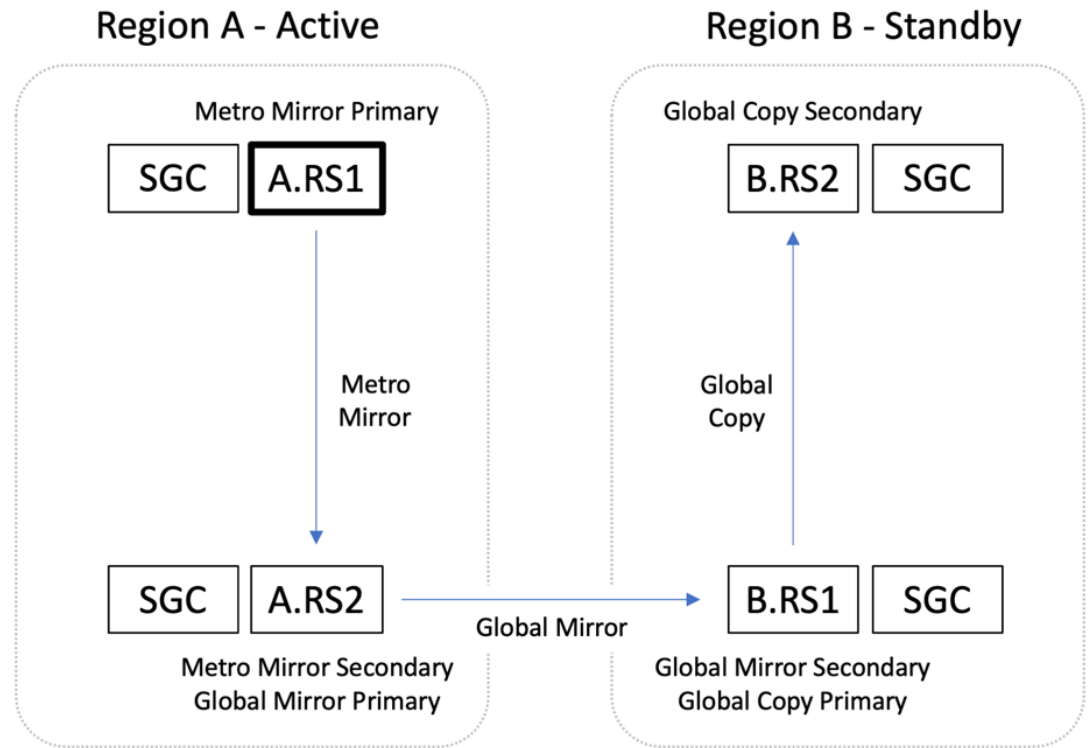
MGM4SITE Virtual LCP in Recovery Region



Take and restore SGC captures from any sites in the Active and/or Standby regions

Active/Standby regions defined with new REGION script

APAR **PH46704**



Management profiles and script statements



Management profiles allow you to specify:

- Which disk set to take the protection copies from
- Which volumes to be protected
- Copy technology to use (FlashCopy or SGC)
- Retention period for the copies
- **Minimum number of copies to keep irrespective of retention period**
- **Automatic release of captures (oldest/expired/no)**
- Minimum capture interval
- Monitor interval

Script statements are provided to:

- Capture a new copy
- Release an existing copy once expired
- Recover a copy
- Restore a copy to production

LCP Profile Modification

Capture Type: SafeGuarded

Consistency Group: GMA2B

Replication Site: 1

Management Profile: SGCTEST

Retention Period: MINUTE(2)

Retention Minimum: 0

Automatic Release: No

Minimum Interval: MINUTE(2)

Monitor Interval: NO

Copy Set: 1

Reservation Time: 0600

Check In Time: 010

Modify Cancel

Retention Minimum



Today, you can specify the retention period for all captures, and you are unable to release any non-expired captures. You can also protect the retention period value in the profile with Role-Based Security definitions, but what if the system clock is somehow altered...

Management profile field to retain a given number of captures by preventing them from expiring, thus protecting them from being released

Default value 0 means that no captures are prevented from expiring, in which case expiration is governed solely by the *Retention Period*

Capture expiration flag values:

- **N** – Capture is within the *Retention Period*
- **R** – Capture exceeds the *Retention Period* but is retained by the *Retention Minimum*
- **Y** – Capture is expired. It exceeds the *Retention Period* and is not retained by the *Retention Minimum*

Automatic Release



Management profile field to enable automatic release of expired captures after a new capture is taken.

Valid values:

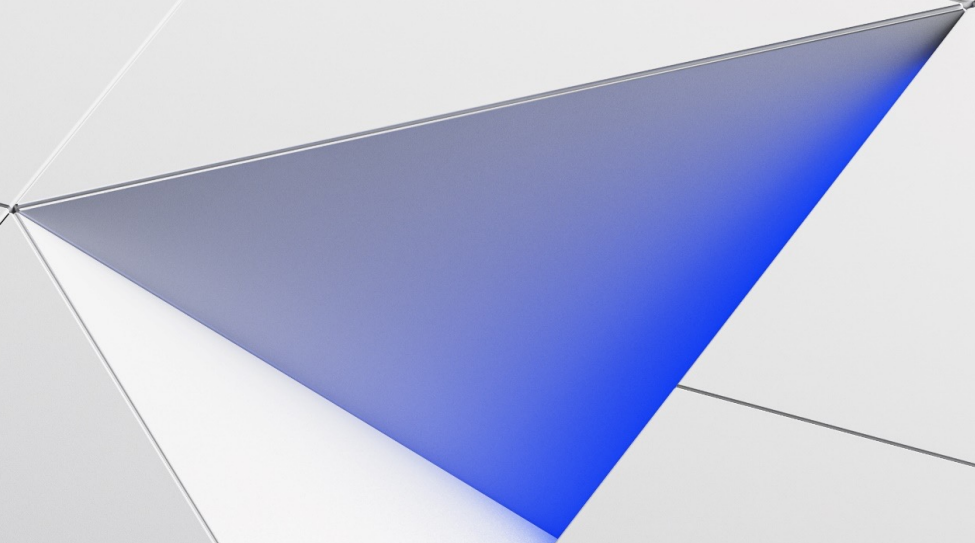
- **NO** - Automatic Release is disabled
- **EXPIRED** - All eligible expired captures will be released
- **OLDEST** - The oldest eligible capture will be released

Capture

```
00:55:20 LCP_CAP_GOLD_SGC_RS1 PLANNED/STANDARD ACTION STARTED FROM STEP 1
00:55:20 LCP='CAPTURE PROFILE(GOLD_SGC_RS1)' STARTED
00:55:20 SCHEDULING LCP CAPTURE FOR MANAGEMENT PROFILE GOLD_SGC_RS1
00:55:20 EXCLUSIVE LCP FLAGSET SERIALIZATION OBTAINED BY LCP CAPTURE
00:55:20 GEO2777W 254 OF 418 VOLUMES ARE SAFEGUARD PROTECTED
00:55:20 SEQUENCE NUMBER 645194D7 HAS BEEN GENERATED FOR THIS SAFEGUARDED CAPTURE
00:55:20 GEO2772I SAFEGUARD CAPTURE PHASE 1 RESERVATION STARTED
00:55:20 GEO2773I SAFEGUARD CAPTURE PHASE 1 RESERVATION ENDED SUCCESSFULLY
00:55:20 GEO2772I SAFEGUARD CAPTURE PHASE 2 RESERVATION SCAN STARTED
00:55:23 GEO2773I SAFEGUARD CAPTURE PHASE 2 RESERVATION SCAN ENDED SUCCESSFULLY
00:55:23 GEO2772I SAFEGUARD CAPTURE PHASE 3 CHECKIN STARTED
00:55:24 GEO2957I THE USER IMPACT TIME (UIT) FOR THIS SAFEGUARDED CAPTURE WAS 0.265 SECONDS
00:55:24 GEO2767W 254 OF 418 RS(1) VOLUMES WERE INCLUDED IN THE CAPTURE TO COPY SET SGC(1)
00:55:24 GEO2773I SAFEGUARD CAPTURE PHASE 3 CHECKIN ENDED SUCCESSFULLY
00:55:24 GEO2775I LCP SAFEGUARD CAPTURE ENDED SUCCESSFULLY
00:55:24 EXCLUSIVE LCP FLAGSET SERIALIZATION RELEASED BY LCP CAPTURE
00:55:24 AUTOMATIC RELEASE(OLDEST) STARTED FOR MANAGEMENT PROFILE GOLD_SGC_RS1
00:55:24 EXCLUSIVE LCP FLAGSET SERIALIZATION OBTAINED BY LCP RELEASE
00:55:25 GEO2779I RELEASING SAFEGUARD CAPTURE SEQUENCE NUMBER 644ABBB5
00:55:27 GEO2940I SAFEGUARD CAPTURE SEQUENCE NUMBER 644ABBB5 SUCCESSFULLY RELEASED
00:55:28 GEO2775I LCP SAFEGUARD RELEASE ENDED SUCCESSFULLY
00:55:28 EXCLUSIVE LCP FLAGSET SERIALIZATION RELEASED BY LCP RELEASE
00:55:28 LCP='CAPTURE PROFILE(GOLD_SGC_RS1)' ENDED RC=0
00:55:28 LCP_CAP_GOLD_SGC_RS1 PLANNED/STANDARD ACTION ENDED
```

Automatic Release(OLDEST)

GDPS Statements of Direction



Statements of Direction



- **GDPS will introduce Dual Control for GDPS LCP Manager to provide a maker/checker function for pervasive changes, on top of the role elevation capability that is possible with the existing role-based security controls.**
- GDPS plans to extend the Logical Corruption Protection (LCP) Manager capabilities to integrate with GDPS HM and CSM – to deliver a Cyber Vault automation platform for clients using GDPS HM and CSM for replication management.
- GDPS will provide an automation framework as part of the LCP Manager for regular Data Validation in the IBM Z Cyber Vault.
- IBM intends to extend GDPS LCP Manager to consume event notification from the anti-malware solution for z/OS described in associated z/OS Statement of direction: [IBM intends to deliver anti-malware for IBM z/OS](#) and enable policy-driven actions to be taken based on the event.
- GDPS LCP Manager will be enhanced to provide stronger integration with IZBR with particular focus on surgical use cases related to IBM Z Cyber Vault.
- GDPS will be enhanced to support clients who have the requirement for MM3SITE in both regions as opposed to MM2SITE (MGM6SITE).

Statements of Direction



Statements by IBM regarding its plans, directions, and intent are subject to change or withdrawal without notice at the sole discretion of IBM. Information regarding potential future products is intended to outline general product direction and should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for IBM products remain at the sole discretion of IBM.

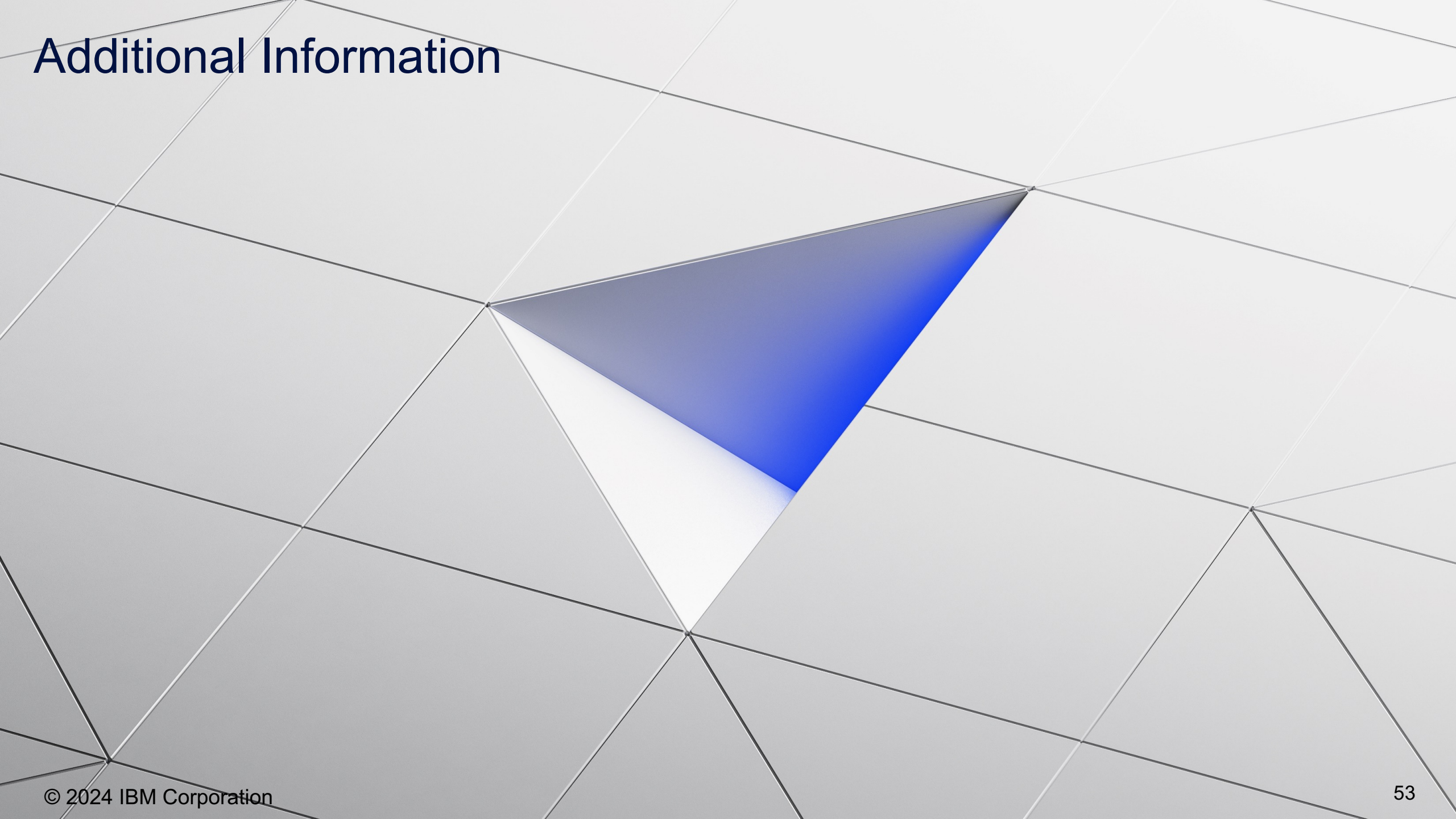
Summary



What value can the IBM GDPS solution offer your organization?

Experience	Commitment		Value		Vision
<p>Client acceptance</p> <ul style="list-style-type: none"> – Over 1200 GDPS licenses installed in 51 countries worldwide – Tested technology to support automated and repeatable results – Complete implementation guided by experienced consultants 	<p>Open industry standards</p> <ul style="list-style-type: none"> – IBM GDPS supports industry-accepted, open replication architectures (Metro Mirror, Global Mirror and Fibre Channel) – Architectures licensed by all enterprise storage vendors – GDPS qualification program for GDPS Metro (IBM, Hitachi) 	<p>Investment protection</p> <ul style="list-style-type: none"> – Designed to be easily upgradeable – Common code base for each product 	<p>Product maturity</p> <ul style="list-style-type: none"> – Generally available since 1998 – Suite of products – Enterprise-to-enterprise capability – Many years of IBM Z production experience – CA, DR, & cyber resiliency best of breed – Continually enhanced 	<p>Client focus</p> <ul style="list-style-type: none"> – GDPS Design Council – Synergy with IBM development labs – Incorporates several IBM patents – New release planned every year – GDPS advocate program 	<p>IBM support</p> <ul style="list-style-type: none"> – Fully supported via standard IBM support structure – Fixes through normal IBM Z channels

Additional Information



Additional Information



■ Web sites:

- GDPS <https://www.ibm.com/products/gdps>
- IBM Z <https://www.ibm.com/z>
- IBM Z <https://www.ibm.com/z/resiliency>
- Storage <https://www.ibm.com/storage>
- Redbook – GDPS Family: An Introduction to Concepts and Capabilities
<http://www.redbooks.ibm.com/abstracts/sg246374.html?Open>

■ GDPS Web site resources

- GDPS: The Enterprise Continuous Availability / Disaster Recovery Solution white paper
- GDPS pre-requisite information
- GDPS training schedule links
- GDPS hardware qualification letters
- E-mail: gdps@us.ibm.com



Thank you!

Accelerate with ATG Survey

Please take a moment to share your feedback with our team!

You can access this 6-question survey via [Menti.com](https://www.menti.com/join/17086924) with code 1708 6924 or

Direct link <https://www.menti.com/alwhyze7z1gz>

Or

QR Code

