

What's new/changed in GDPS 4.1?

On March 13, 2018, IBM has announced Version 4 Release 1 of GDPS Metro, GDPS Metro HyperSwap Manager, GDPS Global - GM and GDPS Metro Global - GM, with General Availability on March 30, 2018. IBM also announced and plans to make available later in 2018 both GDPS Global - XRC and GDPS Metro Global - XRC.

In addition, GDPS Continuous Availability Version 2 Release 1 will be released on 31st May 2018.

This document describes at a high level:

- ▶ New function and changes in GDPS V4.1, including new function added in GDPS V3.14 via Small Programming Enhancement (SPE) APARs.
- ▶ New function and changes in GDPS Continuous Availability V2.1 plus significant new functions introduced in GDPS/A-A V1.7.5 via SPE APARs.
- ▶ End of support information for GDPS and prerequisite products.

What's new or changed in GDPS Metro V4.1

The following new capabilities or procedures have been included in the GDPS Metro V4.1 solution or as small programming enhancements through the service stream since GDPS/PPRC or GDPS/MTMM 3.14 was made available:

- ▶ GDPS Metro V4.1 is the direct replacement for both GDPS/PPRC V3.14 and GDPS/MTMM V3.14.
- ▶ Support is added for the IBM TS7700 Virtualization Engine in GDPS Metro that was not previously available in GDPS/MTMM.
- ▶ GDPS Controlling systems will no longer vary the production devices online as part of standard GDPS processing. This in effect is equivalent to previously running with the KSYSOFF=YES option set. The KSYSOFF GEOPLEX OPTION is removed and can no longer be set.
- ▶ GDPS Heat Map Transfer (HMT) has been updated to remove a number of calls to the GDPS HMTU command line interface and replaced them with direct access to the GDPS HMTU configuration files. This results in improved panel response time, faster GDPS Monitor 3 processing for HMT and reduced CPU utilization.
- ▶ Config processing is updated to check that there is at least 50% free space in the DSISVRT before a config operation can be started. With GDPS Metro, it is possible to execute only the first part of checking the configuration input (syntax, validation of the hardware definitions and DSISVRT free space are checked) without actually updating the running configuration.
- ▶ New mandatory automation operators GEOOPER8/AUTGEO8 and GEOOPER9/AUTGEO9 are introduced. If you do not define these operators, GDPS will not initialize.
- ▶ A new profile for GDPS automation operators is introduced that assigns a console to the AUTGEOx operators when the operator is started. The new profile, GEOPRFAO, resides in a new GDPS installation data set with the low level qualifier of SGDPFRF, which must be concatenated to the DSIPRF statement.
- ▶ GDPS is introducing new capability through exploitation of DS8000 FlashCopy functions to provide a first stage of logical corruption protection (LCP) capability. With the new LCP Manager feature¹ enabled, users can create up to eleven consistent point in time copies of a source device. Ten of these copies, the FlashCopy Sets (FC sets) are defined with no UCBs defined to any system so they can not be tampered with or otherwise used. The additional copy, known as the recovery copy (RC set) will have UCBs defined on systems that are not part of the GDPS sysplex. These other systems can be IPLed from this copy (or another system residence set) to access this RC set of disk.
 - This first stage of LCP Manager provides the ability to define and use these FC and RC sets through the GDPS Metro configuration and extensions to the FlashCopy related script statements.
 - **DASD START SECONDARY** script statement processing is also enhanced to target any of these targets to be used for the copy taken for protection during resynchronization.
- ▶ GDPS-managed FlashCopy devices are no longer required to have a UCB defined for them in the GDPS systems.
- ▶ A new FlashCopy management panel interface has been added to provide greater information about the sets of FlashCopy devices defined to GDPS, the status of any FlashCopy relationships and the type of FlashCopy that has been taken.

¹ The LCP Manager feature is a separate, chargeable feature of GDPS Metro.

- ▶ A number of reliability, availability and serviceability (RAS) enhancements have been made, including the following:
 - **DASD START SECONDARY** processing has been enhanced to better handle differences in disk status within an LSS pair
 - Aspects of GDPS Monitoring has been optimized and where appropriate, APIs have been exploited vs. operator commands to cut down on syslog traffic such as when monitoring CFs.
- ▶ CDS monitoring performed by GDPS will use the DSSSITE parameter in the GDPS Health Check parameter member (GEOHCPxx) if a disk subsystem for a couple data set needs to be identified to GDPS as it is not defined in the GEOPARM configuration.
- ▶ A new GDPS Query Services option is provided. VPCEQUERY SYSPLEX will return information about the CDSes and CFs that are defined to GDPS in the Sysplex Resource Management panels.
- ▶ A number of new capabilities have been added to GDPS health checks as follows:
 - The DSSSITE parameter in GEOHCP00 has been updated, along with the GDPS_Check_DEVICE health check to recognize RS1, RS2 and RS3 as the replication sites where disk subsystems could be installed rather than just recognizing Site1 and Site2.
 - GDPS_Check_XCF_CDS is updated to no longer refer to the DSSSITE parameter as this check no longer requires use of DSSSITE. Be aware that the CDS monitoring performed by GDPS will use the DSSSITE parameter in GEOHCPxx if a disk subsystem for a couple data set is found to be not in the GEOPARM configuration.
 - GDPS_Check_DEVICE is updated to issue an exception when it detects devices defined in the GDPS configuration are not generated as SHARED in the OSConfig. In addition, a separate exception is generated if there is a mismatch in the OSConfig definition between the primary and secondary devices within a pair or triplet.
 - GDPS_Check_DEVICE is updated to issue an exception when a Metro Mirror relationship is detected on a GDPS utility device irrespective of whether the utility device is online or offline.
 - GDPS_Check_CONFIG is updated to issue an exception if the REXX Alternate Library is in use due to the potential performance implications.
 - GDPS_Check_CONFIG is updated to issue an exception if the IOS RECOVERY verb DCCF setting is either left to default or explicitly set to MESSAGE rather than the recommended value of WAIT_STATE in IECIOSxx.
 - The GDPS health check interface is updated with several new capabilities.
 - The PPrint line command is added to enable users to print the output of the check where the command is entered to a pre-allocated data set. The data set needs to be preallocated using the NetView ALLOCATE command.
 - The History line command is available for systems where the z/OS Health Checker history support is active. When this support is active, Health Checker results are stored in a logstream and can be retrieved using the GDPS Health Check panel interface. By default, the latest 15 records will be presented. Since the z/OS System Logger is not available on Controlling systems, this capability is only relevant for Production systems.
 - Option 9, to view the Exit List now also displays the GDPS level, the maintenance level for each check and the compile date.
 - Option 11, selected from the command line prompt provides a new panel where users can go on to view the Health Check information for any system in this GDPS sysplex.

- Verbose mode for health checks has been modified. Prior to GDPS 4.1, turning on verbose mode for GDPS health checks would result in informational messages being returned for each check including any GEOH204 report messages and any IOSPFxxxI messages from the IOS single point of failure service.

With GDPS 4.1, this information is split. Verbose mode will now only return any IOSPFxxxI messages issued by the check. GEOH204 or other messages will now only be returned when *debug* mode is on. For activating debug mode for a specific health check, refer to *IBM Health Checker for z/OS User's Guide* for your release of z/OS.

- GDPS has introduced the ability to bypass specific GDPS health checks completely, or to effectively ignore exceptions from one or more aspects of a given check. This can help in environments where you are restricted by your configuration but do not want to have permanent exceptions being reported.
- ▶ Support is provided to allow the TDMF Master to run on a system being managed by the GDPS z/OS Proxy as opposed to it having to run on a system part of the GDPS sysplex.
- ▶ GDPS support for KVM as a hypervisor is extended to provide additional functions through exploitation of the xDR protocol to communicate with the KVM-managed environment. This includes planned shutdown of the VMs running under KVM and the hypervisor itself, a single point of control to manage disk replication, GDPS FREEZE function to ensure data consistency, coexistence with z/VM and the ability to restart KVM which in turn will restart guest VMs.
- ▶ Support is provided in GDPS for managing temporary capacity on the IBM z14 processors.

What's new or changed in GDPS Metro HM V4.1

The following new capabilities or procedures have been included in the GDPS Metro HyperSwap Manager V4.1 solution or as small programming enhancements through the service stream since GDPS/PPRC HM V3.14 was made available:

- ▶ GDPS Metro HyperSwap Manager V4.1 is the direct replacement for GDPS/PPRC HyperSwap Manager V3.14.
 - The short name for GDPS Metro HyperSwap Manager is GDPS HM.
- ▶ GDPS Controlling systems will no longer vary the production devices online as part of standard GDPS processing.
- ▶ GDPS Heat Map Transfer (HMT) has been updated to remove a number of calls to the GDPS HMTU command line interface and replaced them with direct access to the GDPS HMTU configuration files. This results in improved panel response time, faster GDPS Monitor 3 processing for HMT and reduced CPU utilization.
- ▶ New mandatory automation operators GEOOPER8/AUTGEO8 and GEOOPER9/AUTGEO9 are introduced. If you do not define these operators, GDPS will not initialize.
- ▶ A new profile for GDPS automation operators is introduced that assigns a console to the AUTGEOx operators when the operator is started. The new profile, GEOPRFAO, resides in a new GDPS installation data set with the low level qualifier of SGDPPRF, which must be concatenated to the DSIPRF statement.
- ▶ GDPS-managed FlashCopy devices are no longer required to have a UCB defined for them in the GDPS systems.
- ▶ A new FlashCopy management panel interface has been added to provide greater information about the FlashCopy devices defined to GDPS, the status of any FlashCopy relationships and the type of FlashCopy that has been taken.
- ▶ A number of reliability, availability and serviceability (RAS) enhancements have been made, including the following:
 - **HYPERSW RESTORE** processing has been enhanced to better handle differences in disk status within an LSS pair
 - Aspects of GDPS Monitoring has been optimized.
- ▶ A number of new capabilities have been added to GDPS health checks as follows:
 - GDPS_Check_DEVICE is updated to issue an exception when it detects devices defined in the GDPS configuration are not generated as SHARED in the OSConfig. In addition, a separate exception is generated if there is a mismatch in the OSConfig definition between the primary and secondary devices within a pair or triplet.
 - GDPS_Check_DEVICE is updated to issue an exception when a Metro Mirror relationship is detected on a GDPS utility device irrespective of whether the utility device is online or offline.
 - GDPS_Check_CONFIG is updated to issue an exception if the REXX Alternate Library is in use due to the potential performance implications.
 - GDPS_Check_CONFIG is updated to issue an exception if the IOS RECOVERY verb DCCF setting is either left to default or explicitly set to MESSAGE rather than the recommended value of WAIT_STATE in IECIOSxx.
 - The GDPS health check interface is updated with several new capabilities.
 - The PPrint line command is added to enable users to print the output of the check where the command is entered to a pre-allocated data set. The data set needs to be preallocated using the NetView ALLOCATE command.

- The History line command is available for systems where the z/OS Health Checker history support is active. When this support is active, Health Checker results are stored in a logstream and can be retrieved using the GDPS Health Check panel interface. By default, the latest 15 records will be presented. Since the z/OS System Logger is not available on Controlling systems, this capability is only relevant for Production systems.
 - Option 9, to view the Exit List now also displays the GDPS level, the maintenance level for each check and the compile date.
 - Option 11, selected from the command line prompt provides a new panel where users can go on to view the Health Check information for any system in this GDPS sysplex.
- Verbose mode for health checks has been modified. Prior to GDPS 4.1, turning on verbose mode for GDPS health checks would result in informational messages being returned for each check including any GEOH204 report messages and any IOSPFxxxI messages from the IOS single point of failure service.
- With GDPS 4.1, this information is split. Verbose mode will now only return any IOSPFxxxI messages issued by the check. GEOH204 or other messages will now only be returned when *debug* mode is on. For activating debug mode for a specific health check, refer to *IBM Health Checker for z/OS User's Guide* for your release of z/OS.
- GDPS has introduced the ability to bypass specific GDPS health checks completely, or to effectively ignore exceptions from one or more aspects of a given check. This can help in environments where you are restricted by your configuration but do not want to have permanent exceptions being reported.

What's new or changed in GDPS Global - XRC V4.1

The following new capabilities or procedures have been included in the GDPS Global - XRC V4.1 solution or as small programming enhancements through the service stream since GDPS/XRC V3.14 was made available:

- ▶ GDPS Global - XRC is the direct replacement for GDPS/XRC.
 - The short name for GDPS Global - XRC is GDPS XRC.
- ▶ Full offline primary devices support will be delivered with GDPS Global - XRC V4.1 allowing for the primary and utility devices to remain offline at all times during XRC processing.
- ▶ Device based management will be delivered with GDPS Global - XRC V4.1. This allows the device number to be used for all SDM commands used, rather than the volume serial number.
 - GDPS panels are updated to display 5-digit device numbers and make the device number more prominent.
 - This support allows for the management of primary disk configurations with duplicate VOLSERS.
- ▶ New mandatory automation operators GEOOPER8/AUTGEO8 and GEOOPER9/AUTGEO9 are introduced. If you do not define these operators, GDPS will not initialize.
- ▶ A new profile for GDPS automation operators is introduced that assigns a console to the AUTGEOx operators when the operator is started. The new profile, GEOPRFAO, resides in a new GDPS installation data set with the low level qualifier of SGDPPIRF, which must be concatenated to the DSIPRF statement.
- ▶ GDPS Heat Map Transfer (HMT) has been updated to remove a number of calls to the GDPS HMTU command line interface and replaced them with direct access to the GDPS HMTU configuration files. This results in improved panel response time, faster GDPS Monitor 3 processing for HMT and reduced CPU utilization.
- ▶ The DASD configuration process is updated to allow a syntax check of the GEOXPARM definitions without initiating a configuration load.
- ▶ A number of new capabilities have been added to GDPS health checks as follows:
 - GDPS_Check_CONFIG is updated to issue an exception if the REXX Alternate Library is in use due to the potential performance implications.
 - The GDPS health check interface is updated with several new capabilities.
 - The PPrint line command is added to enable users to print the output of the check where the command is entered to a pre-allocated data set. The data set needs to be preallocated using the NetView ALLOCATE command.
 - The History line command is available for systems where the z/OS Health Checker history support is active. When this support is active, Health Checker results are stored in a logstream and can be retrieved using the GDPS Health Check panel interface. By default, the latest 15 records will be presented. Since the z/OS System Logger is not available on Controlling systems, this capability is only relevant for SDM systems.
 - Option 9, to view the Exit List now also displays the GDPS level, the maintenance level for each check and the compile date.
 - Option 11, selected from the command line prompt provides a new panel where users can go on to view the Health Check information for any system in this GDPS sysplex.

- Verbose mode for health checks has been modified. Prior to GDPS V4.1, turning on verbose mode for GDPS health checks would result in informational messages being returned for each check including any GEOH204 report messages and any IOSPFxxxI messages from the IOS single point of failure service.

With GDPS V4.1, this information is split. Verbose mode will now only return any IOSPFxxxI messages issued by the check. GEOH204 or other messages will now only be returned when *debug* mode is on. For activating debug mode for a specific health check, refer to *IBM Health Checker for z/OS User's Guide* for your release of z/OS.

- GDPS has introduced the ability to bypass specific GDPS health checks completely, or to effectively ignore exceptions from one or more aspects of a given check. This can help in environments where you are restricted by your configuration but do not want to have permanent exceptions being reported.
- ▶ Support is provided in GDPS for managing temporary capacity on the IBM z14 processors.

What's new or changed in GDPS Global - GM V4.1

The following new capabilities or procedures have been included in the GDPS Global - GM V4.1 solution or as small programming enhancements through the service stream since GDPS/GM 3.14 was made available:

- ▶ GDPS Global - GM is the direct replacement for GDPS/GM.
 - The short name for GDPS Global - GM is GDPS GM.
- ▶ GDPS GM has introduced a new GUI based on Liberty WebSphere Profile to replace the previous GDPS Web Interface based on the NetView Web Application Server environment. The previous GUI has been removed.
- ▶ Communications between the Kg and Kr systems can exploit dynamic virtual IP addressing.
- ▶ New mandatory automation operators GEOOPER8/AUTGEO8 and GEOOPER9/AUTGEO9 are introduced. If you do not define these operators, GDPS will not initialize.
- ▶ A new profile for GDPS automation operators is introduced that assigns a console to the AUTGEOx operators when the operator is started. The new profile, GEOPRFAO, resides in a new GDPS installation data set with the low level qualifier of SGDPPIRF, which must be concatenated to the DSIPRF statement.
- ▶ GDPS Heat Map Transfer (HMT) has been updated to remove a number of calls to the GDPS HMTU command line interface and replaced them with direct access to the GDPS HMTU configuration files. This results in improved panel response time, faster GDPS Monitor 3 processing for HMT and reduced CPU utilization.
- ▶ HMT will now respect the presence of a copy of disk taken to FC1 and/or X-disk and will not send learning information when the FC1 FlashCopy relationship exists and X-Disk copy has been captured, but not restarted or cleaned up. In addition, HMT will be stopped for all HMT groups (GMSEC, FC1 and XDISK) if the GM session is not running.
- ▶ A number of new capabilities have been added to GDPS health checks as follows:
 - GDPS_Check_CONFIG is updated to issue an exception if the REXX Alternate Library is in use due to the potential performance implications.
 - The GDPS health check interface is updated with several new capabilities.
 - The PPrint line command is added to enable users to print the output of the check where the command is entered to a pre-allocated data set. The data set needs to be preallocated using the NetView ALLOCATE command.
 - Option 9, to view the Exit List now also displays the GDPS level, the maintenance level for each check and the compile date.
 - Verbose mode for health checks has been modified. Prior to GDPS 4.1, turning on verbose mode for GDPS health checks would result in informational messages being returned for each check including any GEOH204 report messages and any IOSPFxxxI messages from the IOS single point of failure (SPOF) service.

With GDPS 4.1, this information is split. Verbose mode will now only return any IOSPFxxxI messages issued by the check. GEOH204 or other messages will now only be returned when *debug* mode is on. For activating debug mode for a specific health check, refer to *IBM Health Checker for z/OS User's Guide* for your release of z/OS.
 - GDPS has introduced the ability to bypass specific GDPS health checks completely, or to effectively ignore exceptions from one or more aspects of a given check. This can help in environments where you are restricted by your configuration but do not want to have permanent exceptions being reported.

- ▶ Support is provided in GDPS for managing temporary capacity on the IBM z14 processors.

What's new or changed in GDPS Metro Global - XRC V4.1

In addition to the new functions provided in the individual products that constitute the GDPS Metro Global - XRC offering, the following new capabilities or procedures have been included in the GDPS Metro Global - XRC V4.1 solution or as small programming enhancements through the service stream since GDPS/MzGM 3.14 was made available:

- ▶ GDPS Metro Global - XRC is the direct replacement for GDPS/MzGM. GDPS Metro Global - GM V4.1 is based on the combination of GDPS Metro and GDPS Global - XRC both at the V4.1 level.
 - The short name for GDPS Metro Global - XRC is GDPS MzGM.
- ▶ GDPS will support the placement of the GDPS Metro secondary devices in an alternate subchannel set within a GDPS MzGM configuration.
- ▶ MzGM DASD configuration processing time has been reduced when exploiting alternate subchannel set support as the Metro Mirror secondary devices no longer need to be queried to determine the device number.
- ▶ Support is provided for GDPS MzGM to run with GDPS Metro with a single leg configured on RL1 in an MzGM IR configuration.

What's new or changed in GDPS Metro Global - GM 4.1

In addition to the new functions provided in the individual products that constitute the GDPS Metro Global - GM offering, the following new capabilities or procedures have been included in the GDPS Metro Global - GM v4.1 solution or as small programming enhancements through the service stream since GDPS/MGM V3.14 was made available:

- ▶ GDPS Metro Global - GM is the direct replacement for GDPS/MGM. GDPS Metro Global - GM V4.1 is based on the combination of GDPS Metro and GDPS Global - GM both at the V4.1 level.
 - The short name for GDPS Metro Global - GM is GDPS MGM.
- ▶ GDPS V4.1 is introducing, a feature called Testcopy manager, which provides the ability for GDPS MGM 4-site customers to capture a consistent copy of the production disk for testing on an external disk subsystem for testing or any other purpose. This is achieved using an external Kp system exploiting the GDPS Metro code through the use of new GDPS supplied procedures.
 - Enhancements in supplied procedures and extensions to GEOGROUP are provided to allow the Testcopy Manager to communicate with the necessary GDPS Controlling systems in the MGM 4-site configuration.
- ▶ GDPS V4.1 is introducing, a feature called LCP manager, This provides the ability for GDPS MGM 4-site customers to capture up to eleven consistent copies of the production disk for logical corruption protection or any other purpose. This is achieved using an external Kp system running the GDPS Metro code with the LCP feature enabled.
 - Enhancements in supplied procedures and extensions to GEOGROUP are provided to allow the LCP Manager to communicate with the necessary GDPS Controlling systems in the MGM 4-site configuration.
- ▶ GDPS Heat Map Transfer (HMT) processing is enhanced by stopping all HMT transfer processing on the GM leg if the GM session mirroring source is moved from Site 2 to Site 1 and resumed when moved back to Site 2.
- ▶ In a GDPS MGM 3-site configuration that is able to exploit multi-target metro mirror, GDPS will no longer terminate existing Global Copy Testcopy relationships prior to performing the recovery of GM secondary volumes.

What's new or changed in GDPS Continuous Availability 2.1

The following new capabilities or procedures have been included in the GDPS Continuous Availability 2.1 solution:

- ▶ The definition of DB2 workloads is simplified. All DB2 workloads are now defined as MCG workloads. To support this change, the WKLOADDESC policy items CONSISTENCY_GROUP and CONSISTENCY_GROUPS are mandatory, and the QREP SCHEMA name must be defined in the policy.
- ▶ GDPS, through support in IBM Multi-site Workload Lifeline V2.5, now supports workloads which use WebSphere MQ for connectivity. There are no GDPS definitions required to exploit this, but definitions are required in the IBM Multi-site Workload Lifeline configuration.
- ▶ The GDPS Zero Data Loss (ZDL) configuration has been updated to support a symmetrical implementation. The initial implementation only supported ZDL to be configured in one direction.
- ▶ A new GUI has been introduced based on Liberty WebSphere Profile to replace the previous GDPS Web Interface based on the NetView Web Application Server environment.
- ▶ Support is provided in GDPS for managing temporary capacity on the IBM z14 processors.
- ▶ Support for GDPS/Active-Active V1.7 will be discontinued on March 31, 2019.

End of support

- ▶ In accordance with the GDPS “n, n-2” support policy, support for GDPS V3.12 will be discontinued on March 31, 2018 and support will be discontinued for GDPS V3.13 on March 31, 2019.
- ▶ Support for GDPS/Active-Active V1.7 will be discontinued on March 31, 2019.
- ▶ Support for z/OS Version 2.1 will be discontinued on September 30, 2018. After this date you must be running at z/OS V2.2 or higher for continued support.
- ▶ Support for System Automation for z/OS V3.4 was discontinued on September 30, 2017. After this date, you must be running System Automation for z/OS V3.5 or higher for continued support.
- ▶ The only supported release of NetView when running with GDPS V4.1 or GDPS Continuous Availability V2.1 is Tivoli NetView V6.2.1 (or higher) or through IBM Service Management Suite for z/OS V1.2 (or higher). Support for all prior releases is no longer provided as new functions only available in this release of NetView are being exploited by GDPS.
- ▶ Support for z/VM V6.2 was discontinued on June 30, 2017 and support for both z/VM V5.4 and V6.3 was discontinued on December 31, 2017. Clients using xDR must be running on a generally supported release for continued support.
- ▶ Support for System Automation Application Manager V4.1 DR Hardware Adapter feature was discontinued on July 25, 2017. Any clients using DCM with System Automation Application Manager will no longer be supported as this feature was used for the integration between GDPS and System Automation Application Manager for DCM purposes.
- ▶ Support for managing the zBX from within GDPS is withdrawn with immediate effect.



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