

Monitoring

While logging stores data based on events that occur within a location (a reactive process), monitoring is based more on proactive polling of the functionality in a location to ensure that it is working correctly and performing well. From this perspective, much of the DGP monitoring functionality is actually a specialized form of testing.

Remote users of the DGPDrive application who are members of the RemoteMonitor role store end-to-end and server performance metrics in the SysMetrics table of the location to which they are connected. This is the same performance data shown in the status bar of the DGPDrive application during normal use, and is intended to constantly collect performance data from production locations under realistic workloads. The unit tests built into each API method, plus the client application displaying the results also prove that the specific functionality is working correctly. Errors and/or slow performance experienced by a user that is a member of the monitoring role will be logged to the location to which they are connected, if possible. Slow performance is often an indication of a “gray failure” in distributed systems, where some individual part of the system is experiencing a problem while the rest of the system is still functioning correctly.

Reports, charts and graphs can be created using the data from the SysMetrics table to analyze trends in the data over time. The CountCheck and DupeCheck processes are another type of monitoring used to prove that the replicated data in each location is truly in synch with the other locations, and that no problems exist in the data. If problems are found, they can be repaired in place, usually as a background process. The exception is mismatched data between locations, which require an admin user to determine which version of the data values are correct.

Other API methods are used to monitor the count of the number of records stored in various database tables, to track the rate at which new records are being created. Simple reports, charts and graphs can then display these rates to admins in system dashboard UI's so they can observe any problems and plan for the growth of a system.

DGPDrive Beta					
Connect Help Storage User Security Configuration Testing					
API Methods	Search Field	APIName	Value	Search	ACTIVE
APIName	MethodName	VersionName	MethodDescrip	rec_gid	row_id
GeneralWork	New	Base	creates a new GeneralWork record.	1220040	1000229
GeneralWork	QueueScan	Base	scans for problems with the records in the GeneralWork table.	1220130	1000237
GeneralWork	ReleaseRecord	Base	releases a claimed GeneralWork record.	1220100	1000234
GeneralWork	Save	Base	Saves (updates) an existing GeneralWork record.	1220050	1000230
Group User	Assign	Base	Creates a new groupuser record.	1020030	1000018
Group User	Duplicate	Base	Checks for duplicates in the Group User table.	1020060	1000021
Group User	GetAssigned	Base	Returns all groupuser groups assigned to a user.	1020000	1000015
Group User	GetAvailable	Base	Returns groupuser groups that have not been assigned to a user .	1020010	1000016
Group User	GetDestCount	Base	Returns the count of the source records in the source table.	1020080	1000022
Group User	GetSource	Base	Returns groupuser source records that are greater than the placeholder value.	1020020	1000017
Group User	GetSrcCount	Base	Returns the count of source records in a destination table.	1020070	1000023
Group User	Remove	Base	Deletes (updates) an existing groupuser record.	1020040	1000019
Group User	Replicate	Base	Merges a replicated record into the destination table.	1020050	1000020
LatticeMetrics	Delete	Base	Soft delete of a LatticeMetrics record.	1180130	1000193
LatticeMetrics	GetAll	Base	Query for a set of LatticeMetrics records.	1180120	1000192
LatticeMetrics	GetByID	Base	Query for a LatticeMetrics record by ID value.	1180110	1000191
LatticeMetrics	GetCount	Base	Returns the count of records that match the search criteria.	1180140	1000195
LatticeMetrics	GetPageSize	Base	Returns the number of rows in a page of results.	1180160	1000194
LatticeMetrics	GetSearch	Base	Returns the size of a page of results for the table.	1180150	1000196
LatticeMetrics	New	Base	Creates new LatticeMetrics records.	1180100	1000190
Methods: 2 ClientMS: 4.26 ServerMS: 2.77					

One example of DGP monitoring is the remote monitor functionality built into the DGPDrive application. Users that belong to the RemoteMonitor role save the performance metrics displayed in the status bar (along with other info) to the SysMetrics database of the location they are connected to. This monitors the functionality and performance of production system while in actual use.

Logging and Metrics Verification

1. *Errors and exceptions for each location of an environment can be viewed in the DGPErrors form of the Lattice application.*
2. *A tool like Splunk should be used to monitor the DGPErrors table and server Event Viewers to notify admins whenever problems occur. Dashboards can also be built using the error data from the DGPErrors table as well.*
3. *End-to-end and server performance data is stored in the SysMetrics table of the location and environment that the user is connected to. This is especially important for collecting performance metrics from production systems while they are in actual use, without adversely affecting those systems. Reports, charts, graphs can then be created to analyze the performance metrics over time. Dashboards can also be created to monitor the performance of the system using the SysMetrics data in real time.*
4. *When logging is turned on, data about the state and performance of automated processes are stored in the AutoWorkLog table. To manage the amount of log data generated and stored, this logging should only be turned on for a small number of processes at a time. The data in the AutoWorkLog table can be analyzed just like the SysMetrics data. Also, logging would be turned on for a period of time for a specific automated process to help “debug” problems or performance issues that have occurred.*