**Description:**

This script(**PerfStat.sql**) is to trouble shoot the performance latency issue of log reader agents and distribution agents based on the statistic info from agent history tables which are stored in the distribution database.

For now the script support trouble shooting with distribution database restored from back up file(**offline mode**) as well as directly running under a distributior(**live mode**).

All the results would be stored under **replstats** database along with support tables.

About the performance, usually for a 1300 statistic record rows input, the running time of this script is about 30 seconds.

Besides, in this script there is a back up procedure **proc\_perfstat\_distdb\_backup** which is to back up the meta of target distribution database into a bak file for troubleshooting under other sql server instances (**offline mode**).

**Functional Spec:**

**1.Input parameter:**

**@distribution\_data sysname = '%',**

name of distribution database or restored distribution database. Should be set with @backup\_troubleshooting when it comes to trouble shooting of restored distribution database: @distribution\_data will require the name of restored distribution database and @backup\_troubleshooting should be set to 1

**@agent\_name sysname = '%',**

name of agent we want to trouble shoot.

**@publisher\_db sysname = '%',**

name of publisher database we want to trouble shoot.

**@publication\_name sysname = '%',**

name of publication we want to trouble shoot.

**@timeperiod int = -1,**

duration of data we want to trouble shoot.

**@backup\_troubleshooting bit = 0**

0 for directly troubleshooting on the targeted distributor server.1 for troubleshooting based on the distribution database back up file.

**2.Output result:**

**replstats ..logragentissues\_<distribution db>**

Table stores all the exceptional rows located in log reader agent history records along with the agent info.

**replstats** ..**logragentissues\_<distribution db>\_replinfo**

Table generated based on the **logragentissues\_< distribution database name>** and **replstatssourceinfo\_< distribution database name >, added replication info as reference (related publisher info)**

**replstats** ..**distagentissues\_<distribution db>**

Table stores all the exceptional rows located in distribution agent history records along with the agent info.

**replstats** ..**distagentissues\_<distribution db>\_replinfo**

Table generated based on the **distagentissues \_< distribution database name>** and **replstatssourceinfo\_< distribution database name >, added replication info as reference (related publication, subscription and article info)**

**3.Resources tables**

tables used in the troubleshooting process and retrieved from distribution database and master database

**Required tables:**

**History info**

<distribution db>..MSlogreader\_history

<distribution db>..MSdistribution\_history

**Agent info**

<distribution db>..MSlogreader\_agents

<distribution db>..MSdistribution\_agents

**Optional tables:**

<distribution db>..MSpublications

<distribution db>..MSarticles

<distribution db>..MSsubscriptions

master.sys.servers/<distribution db>..MSreplservers(AG group)

**4.Support tables**

tables used in the troubleshooting process which are generated at the stage of environment set up and the troubleshooting process.

**replstats ..distdbinfo**: table distdbinfo stores the distribution database info we want to troubleshoot.

**replstats ..issuesdescription**: table issuesdescription stores supported description items of delayed threads (reader or writer)

**replstats ..replstatssourceinfo\_<distribution db > :**replstatssourceinfo\_<distribution\_db\_name> to store the collected statistics information from source tables,

**replstats.. replstattroubleshooting\_< distribution db >:** table retrieved the necessary info from **replstats ..replstatssourceinfo\_<distribution db >** and join the actually trouble shooting process (xml data cast and exceptional row locating) to avoid the degradation of performance when **replstats ..replstatssourceinfo\_<distribution db >** directly attend the trouble shooting process. This table would be deleted when troubleshooting finished and **replstats** ..**logragentissues\_<distribution db>\_replinfo, replstats** ..**distagentissues\_<distribution db>\_replinfo** created.

**Store procedures**

1. **Store procedures**

**proc\_perfstat\_diagnose (Main entrance)**

this procedure is to find out the exceptional rows in replstatssourceinfo\_<distribution\_db\_name> table which have higher wait time (for now we just pick up top 5) or the state of the row has been marked as 2 or 3, output these exceptional rows into distagentissues\_<distribution database name> and logragentissues\_<distribution database name> combined with the description in issuesdescription (table created in proc\_perfstat\_env\_set\_up)

**proc\_distdb\_validate**

this procedure is to validate that if there are enough meta data tables in back up database to support the troubleshooting.

**proc\_perfstat\_env\_set\_up**

this procedure is to set up the resource info and tables for trouble shooting.

1) live mode (trouble shooting in the targeted distributor), by default we generate resource info tables for all available distribution databases in this distributor.

2) backup file trouble shooting mode, generate resource info tables based on the restored target database from back up file and

**proc\_perfstat\_transfer\_xml\_data\_to\_table**

this procedure is to transfer the xml statistics data in the replstatssourceinfo\_<distribution\_db\_name> into table format row by row via rowid.

**proc\_perfstat\_data\_process**

this procedure is to cast xml format statistics from agent history tables into

table format data in replstatssourceinfo\_<distribution\_db\_name> combined with related help info from MSdistribution\_history, MSdistribution\_agents, MSpublications, MSsubscriptions, MSarticles and master.sys.servers.

**proc\_perfstat\_distdb\_backup**

this procedure is to back up the data of a distribution database along with the servers info (master.sys.servers) for performance trouble shooting, .bak file will be put under c driver.

**Running Example**

**Live mode**

exec proc\_perfstat

exec proc\_perfstat @distribution\_data = 'distribution\_BAK1'

exec proc\_perfstat @timeperiod=12

exec proc\_perfstat @publisher\_db = 'Pub1'

exec proc\_perfstat @publication\_name = 'pub0'

exec proc\_perfstat @agent\_name = 'ZIMWANG2\BAK1-Pub1-1'

exec proc\_perfstat @agent\_name = 'ZIMWANG2\BAK1-Pub1-pub0-ZIMWANG2\BAK2-1'

exec proc\_perfstat @distribution\_data = 'distribution\_BAK1', @publisher\_db = 'Pub1', @publication\_name = 'pub0', @agent\_name = 'ZIMWANG2\BAK1-Pub1-1'

exec proc\_perfstat @distribution\_data = 'distribution\_BAK1', @publisher\_db = 'Pub1', @publication\_name = 'pub0', @agent\_name = 'ZIMWANG2\BAK1-Pub1-pub0-ZIMWANG2\BAK2-1'

**Offline mode (bak file)**

exec proc\_perfstat @distribution\_data = 'MS\_DistBackup2.bak', @backup\_troubleshooting = 1

exec proc\_perfstat @distribution\_data = 'MS\_DistBackup2.bak', @backup\_troubleshooting = 1, @publisher\_db = 'iPACS3\_2017\_01', @publication\_name = 'iPACS3\_2017\_01\_pub'

exec proc\_perfstat @distribution\_data = 'MS\_DistBackup2.bak', @agent\_name = 'USSLTC1471-iPACS3\_2017\_01-21', @backup\_troubleshooting = 1

exec proc\_perfstat @distribution\_data = 'MS\_DistBackup2.bak', @agent\_name = 'USSLTC1471-iPACS3\_2017\_01-iPACS3\_2017\_01\_pub-USSLTC1474-20', @backup\_troubleshooting = 1

**Back up**

proc\_perfstat\_distdb\_backup @distribution\_db = 'distribution'