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1. MaxGauge for Java Architecture

It is designed to monitor not only for basic monitoring configuration of WEB~WAS~DB environment, but also for user terminal to core back-end system of an enterprise at the point of End-To-End at the same time.

The agent is installed in the target application monitoring system of the enterprise and it transmits the performance data. The server for data collection and the database for storage should be additionally installed.

Based on WAS (JVM) monitoring, MaxGauge for Java internal engine module consists of four basic layers as follows.

**Data Collection Layer:** It is installed to directly monitor the application of the enterprise and it collects various performance data and transmits it to the server.

**MaxGauge for Java Application Server Layer:** It is a dedicated Web Daemon Server that collects/analyzes/ processes the performance data transmitted from the agent to MaxGauge for Java server area, stores it in the database, and manages the configuration information

**Data Storage Layer:** It is a storage area for storing processed performance data from MaxGauge for Java server, and it stores various performance information and data for analysis.

**Web Client Layer:** It provides web-based user interface for real-time monitoring and performance analysis of collected performance data.
MaxGauge for Java agent (JSPD) and the independent processes (IMXTXN, IMXUTX) collect various performance data and send it to a collection server (as known as Data Gather). The collection server analyzes and processes the received performance data, stores it in a data repository (DB), and manages various configuration information. The stored data provides various real-time monitoring, performance indicators and statistical analysis interfaces through the user interface (based on HTML5) of the web client terminal.

**Note.** MaxGauge for Java AP Server Layer and Data Storage Layer are divided logically. Both layers can be configured in one server. Please refer to "MaxGauge for Java Administration Guide" for more detail about MAXGAUGE FOR JAVA Architecture.
1.1. MaxGauge for Java Network Connection

This section describes the configuration of network ports required for processing various network communications between the respective layers of MaxGauge for Java. When installing MaxGauge for Java, the required network ports are as follows. It is mainly related to the port number setting and if the default port number is already being used in another application, it should be changed to another port. Also, when multiple MaxGauge for Java environments are installed on the same hardware, please be careful of setting so that the corresponding port number does not overlap.

### Data Collection Layer

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSPD</td>
<td>It is operated by an internal thread in the JVM and collects most of the WAS related performance data.</td>
</tr>
<tr>
<td>IMXOSM</td>
<td>It collects system resources (Memory, CPU etc) of OS and statistical information and checks availability of WAS container.</td>
</tr>
<tr>
<td>IMXTXN</td>
<td>It collects SQL query information.</td>
</tr>
<tr>
<td>IMXDBM</td>
<td>It collects SQL OWI-based statistics &amp; event data.</td>
</tr>
<tr>
<td>IMXUTS</td>
<td>It collects Remote information collection (EtoE).</td>
</tr>
<tr>
<td>OBSD</td>
<td>It monitors internal process. (It monitors periodically every 30 seconds and restarts if it is down)</td>
</tr>
</tbody>
</table>
### MaxGauge for Java AP Server Layer

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slave DataGatherer</td>
<td>It is a module that collects and processes the data sent from the Data Collection Layer and can be extended to a few objects depending on the number of objects to be collected and the amount of hatching. In general, it is recommended to compose one slave configuration per 50 instances monitoring. (Number of slave = number of instances/50)</td>
</tr>
<tr>
<td>Master DataGatherer</td>
<td>It manages Slave DataGatherer and provides information according to the requests from PlatformJS.</td>
</tr>
<tr>
<td>PlatformJS</td>
<td>It provides real-time monitoring information and analysis information through the user's web browser</td>
</tr>
<tr>
<td>OBSD</td>
<td>It monitors internal process. (It monitors periodically every 30 seconds and operates if it is down)</td>
</tr>
</tbody>
</table>

### Service port

<table>
<thead>
<tr>
<th>Source</th>
<th>Target</th>
<th>Port</th>
<th>Protocol</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSPD</td>
<td>IMXTXN</td>
<td>2404</td>
<td>UDP</td>
<td>Sends SQL-related information</td>
</tr>
<tr>
<td>JSPD</td>
<td>IMXUTS</td>
<td>2504</td>
<td>UDP</td>
<td>Sends Remote-related information (EtoE)</td>
</tr>
<tr>
<td>IMXTXN</td>
<td>IMXDBM</td>
<td>2404</td>
<td>UDP</td>
<td>Sends DB connection-related information</td>
</tr>
<tr>
<td>JSPD</td>
<td>Slave Data Gather</td>
<td>1314</td>
<td>TCP</td>
<td>Sends Key JVM performance information</td>
</tr>
<tr>
<td>IMXOSM</td>
<td>Slave Data Gather</td>
<td></td>
<td></td>
<td>Sends OS resource information</td>
</tr>
<tr>
<td>IMXTXN</td>
<td>Slave Data Gather</td>
<td></td>
<td></td>
<td>Sends SQL-related information</td>
</tr>
<tr>
<td>IMXUTS</td>
<td>Slave Data Gather</td>
<td></td>
<td></td>
<td>Sends Remote-related information (EtoE)</td>
</tr>
<tr>
<td>IMXDBM</td>
<td>Slave Data Gather</td>
<td></td>
<td></td>
<td>Sends DB connection-related information</td>
</tr>
<tr>
<td>Slave Data Gather</td>
<td>Master Data Gather</td>
<td>1313</td>
<td>UDP</td>
<td>Saves Sever and DB agent information</td>
</tr>
<tr>
<td>Slave Data Gather</td>
<td>Repository</td>
<td>5430</td>
<td>TCP</td>
<td>Saves Sever and DB agent information</td>
</tr>
<tr>
<td>Master Data Gather</td>
<td>Repository</td>
<td>5430</td>
<td>TCP</td>
<td>Saves statistical information</td>
</tr>
<tr>
<td>PlatformJS</td>
<td>Web Client</td>
<td>8080</td>
<td>TCP</td>
<td>Sends information displayed in the browser</td>
</tr>
</tbody>
</table>
1.2 Compatibility

The supported range of MaxGauge for Java products and its compatible versions are as follows:

### JAVA ENVIRONMENT

<table>
<thead>
<tr>
<th>Operating System (OS)</th>
<th>Application Server (WAS)</th>
<th>Supported DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX 5.x or above (32/64bit)</td>
<td>WebLogic 10.x or above</td>
<td>Oracle</td>
</tr>
<tr>
<td>HP-UX IA64</td>
<td>WebSphere 6.1 or above</td>
<td>DB2</td>
</tr>
<tr>
<td>Linux (32/64bit)</td>
<td>JEOS 5.x or above</td>
<td>MS SQL Server</td>
</tr>
<tr>
<td>Solaris SPARC (32/64bit)</td>
<td>Tomcat 5.x or above</td>
<td>Mysql</td>
</tr>
<tr>
<td>Solaris (x86/x64)</td>
<td>Oracle Application Server(OC4J)</td>
<td>Postgres</td>
</tr>
<tr>
<td>Windows Server 2003 or above (x86/x64)</td>
<td>Resin 3.x or above</td>
<td>Sybase</td>
</tr>
<tr>
<td></td>
<td>Jboss 5.x or above</td>
<td>Tibero</td>
</tr>
<tr>
<td></td>
<td>GlassFish 2.x or above (JDK 1.5 or above)</td>
<td></td>
</tr>
</tbody>
</table>

### .Net environment

<table>
<thead>
<tr>
<th>Operating System (OS)</th>
<th>Web server</th>
<th>Application Server</th>
<th>Supported DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Server 2003 or above (x86/x64 )</td>
<td>IIS 6.0 or above</td>
<td>.NET Framework 2.0 or above</td>
<td>MS SQL Server 2008 or above</td>
</tr>
</tbody>
</table>

### TP environment

<table>
<thead>
<tr>
<th>Operating System (OS)</th>
<th>Application Server (WAS)</th>
<th>Supported DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX 5.x or above (32/64bit)</td>
<td>TMAX 5.x or above</td>
<td>Oracle</td>
</tr>
<tr>
<td>HP-UX IA64</td>
<td>TUXEDO 10.x or above</td>
<td>DB2</td>
</tr>
<tr>
<td>Linux (32/64bit)</td>
<td>TIBCO 5.x or above</td>
<td>MS SQL Server</td>
</tr>
<tr>
<td>Solaris SPARC (32/64bit)</td>
<td></td>
<td>Mysql</td>
</tr>
<tr>
<td>Solaris (x86/x64)</td>
<td></td>
<td>Postgres</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sybase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tibero</td>
</tr>
</tbody>
</table>
Current MaxGauge for Java Product Support

WAS Server Tier
- Windows / Unix / Linux
  - IntMax Agent J2E0
  - JBoss
- Windows / Unix / Linux
  - IntMax Agent J2E0
  - WebSphere
- Windows / Unix / Linux
  - IntMax Agent J2E0
  - Tomcat
- Windows / Unix / Linux
  - IntMax Agent J2E0
  - EJB (JavaBeans)

DB Server Tier
- Windows
  - Oracle
  - Repository
  - IBM DB2

InterMax Repository Server Tier
- Windows
  - Repository
- Solaris/Linux
  - Repository
  - PostgreSQL
- Windows
  - Repository
  - Oracle
- Unix / Linux
  - Repository
  - Oracle

Start
1.3. MaxGauge for Java License

MaxGauge for Java License Key is required to run MaxGauge for Java Agent Set.

1.3.1. Trial License Key

The Trial License Key is only available for a limited period of time for testing purposes.

1.3.2. Formal License Key

The Formal License Key is issued after the product contract and the following information should be provided when requesting a License Key:

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Name</td>
<td>Business Name</td>
</tr>
<tr>
<td>OS information</td>
<td>Unix Type</td>
</tr>
<tr>
<td></td>
<td>Unix Version</td>
</tr>
<tr>
<td></td>
<td>Unix Bit Level</td>
</tr>
<tr>
<td>Database information</td>
<td>Oracle Version</td>
</tr>
<tr>
<td>(In Oracle)</td>
<td>Oracle Bit Level</td>
</tr>
<tr>
<td></td>
<td>Oracle SID</td>
</tr>
<tr>
<td>Host Server information</td>
<td>IP Address</td>
</tr>
<tr>
<td></td>
<td>Host ID</td>
</tr>
<tr>
<td></td>
<td>Real CPU</td>
</tr>
<tr>
<td></td>
<td>Dual Core Count</td>
</tr>
</tbody>
</table>

**Note.** MaxGauge for Java license policy is a unit of CPU core, and the validity of the formal license key is checked using the server's host ID and the number of CPU core. Therefore, the issued Formal License Key can be used only in the server. If the number of CPU core of the server is increased, the Formal License Key Validation check error occurs and accordingly, MaxGauge for Java Agent Set does not operate normally. Therefore, if the number of CPU cores increases, re-application for Formal License Key should be processed in advance. (In some cases, a re-contract may be required)
2. Data Collection Layer Installation and configuration

2.1 MaxGauge for Java WAS Agent Set (JSPD)

2.1.1 Advance Preparation

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Recommended Standard and Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAS Type</td>
<td>J2EE based</td>
</tr>
<tr>
<td>Java Version</td>
<td>Java 1.4 or higher ~ 1.8 supported</td>
</tr>
<tr>
<td>OS Disk Size</td>
<td>Agent Set Size : 100MB</td>
</tr>
</tbody>
</table>

**Note.** DAEMON based on JAVA also can be monitored.

Network Port (Windows)
The WAS Agent communicates with the Slave Data Gatherer using the 1314 TCP port. Control Panel allows all 1314 TCP ports to be inbound / outbound.

Network Port (Unix / Linux)
JSPD uses the 1314 TCP port to communicate with the Slave Data Gatherer. A method to check whether the port is used is as follow : 

![Network Port Configuration](image-url)
Composition of WAS Agent Set

It is an agent process installed in corresponding server except JSPD module added to the WAS (JVM) DAEMON and each agent has three agent sets as follows.

**IMXOSM**: Collects information about OS resources such as memory or CPU of the OS.

**IMXTXN**: Collects information related to SQL.

**IMXUTS**: Collects information related to Remote Data.

2.1.2. Installation Procedure

**Windows environment**

The following installation files are required to install the WAS Agent. Upload the following files to the WAS server.

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxGauge for Java-Agent_YYMMDD.tar</td>
<td>WAS Agent install file</td>
</tr>
<tr>
<td>License_.key</td>
<td>License file</td>
</tr>
</tbody>
</table>

Unzip the uploaded file into the WAS Os User Home Directory.

We will call `{Extract path}\MaxGauge for Java\jspd` as `%JSPD_HOME%` and the rest is the same as above.

**Note.** The decompression location may be changed. The decompression position may be changed.

Modify `%JSPD_HOME%\cfg\agent\jspd.prop` file to enter internal process information and Data Gatherer information.

The default setting parameters are as follows:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR_ADDR</td>
<td>Enter IP:Port information of Slave Data Gatherer.</td>
</tr>
<tr>
<td>TXN_ADDR</td>
<td>Enter IMXTXN port information.</td>
</tr>
<tr>
<td>UTS_ADDR</td>
<td>Enter IMXUTS port information.</td>
</tr>
</tbody>
</table>

Performing example

```
# WR_ADDR
WR_ADDR=192.168.123.52:1314

# %{UDP_PORT|UDP_PORT}
TXN_ADDR=2404

# %{UDP_PORT|UDP_PORT}
UTS_ADDR=2504
```
For MaxGauge for Java WAS Agent Startup, MaxGauge for Java option must be applied to each WAS Start Batch file. MaxGauge for Java options are as follows:

### Java Version 1.7 or higher

```
-javaagent:%JSPD_HOME%/lib/jspd.jar
```

### Java Version 1.5 or higher

```
-javaagent:%JSPD_HOME%/lib/jspd.jar
```

### Java Version 1.4

```
Xbootclasspath/p:%JSPD_HOME%/lib/jspd-common.jar;JSPD_HOME%/lib/jspd-pool.jar
```

**Note1.** WAS_ID is used to map each agent to each WAS and can be assigned from 1 to 65535. Please be careful of setting so that the same number does not duplicate.  
**Note2.** In environments with Java version 1.4 or lower, you need to go to `%JSPD_HOME%/build-jdk` folder and run `build.bat jdk`.

Please refer to “Appendix. MaxGauge for Java Option Setting by WAS vendor” for more detail. Copy license file to `%JSPD_HOME%/cfg` directory for license application.

### Unix / Linux environment

The following installation files are required to install the WAS Agent, and upload the file in binary format.

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxGauge for Java_Agent_YYMMDD.tar</td>
<td>WAS Agent install file</td>
</tr>
<tr>
<td>License_key</td>
<td>License file</td>
</tr>
</tbody>
</table>

Unzip the uploaded file into the WAS OS User Home Directory. The decompression method is as follows. We will call `{Extract path}/Jspd` directory as `$JSPD_HOME` and the rest is the same as above.

```
$ tar -xvf MaxGauge for Java_Agent_YYMMDD.tar
```

Modify the `$JSPD_HOME/cfg/agent/jspd.prop` file to enter internal process information and Data Gatherer information.

The default setting parameters are as follows:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR_ADDR</td>
<td>Enter IP:Port information of Slave Data Gatherer.</td>
</tr>
<tr>
<td>TXN_ADDR</td>
<td>Enter IMXTXN port information.</td>
</tr>
<tr>
<td>UTS_ADDR</td>
<td>Enter IMXUTS port information.</td>
</tr>
</tbody>
</table>
Performing example

```
# WR_ADDR
WR_ADDR=192.168.123.52:1314
# ${UDP_PORT|UDP_PORT}
TXN_ADDR=2404
# ${UDP_PORT|UDP_PORT}
UTS_ADDR=2504
```

For MaxGauge for Java WAS Agent Startup, MaxGauge for Java option must be applied to each WAS start script file. MaxGauge for Java options are as follows:

**Java Version 1.7 or higher**
```
-noverify -Djspd.wasid={WAS_ID} -javaagent:$JSPD_HOME/lib/jspd.jar
```

**Java Version 1.5 or higher**
```
-Djspd.wasid={WAS_ID} -javaagent:$JSPD_HOME/lib/jspd.jar
```

**Java Version 1.4**
```
-Djspd.wasid={WAS_ID} -Xbootclasspath/p:$JSPD_HOME/lib/jspd-common.jar;JSPD_HOME%\lib\jspd-common.jar;JSPD_HOME%\lib\jspd-pool.jar
```

**Note1.** WAS_ID is used to map each agent to each WAS and can be assigned from 1 to 65536. Please be careful of setting so that the same number does not duplicate.

**Note2.** In environments with Java version 1.4 or lower, you need to go to $JSPD_HOME/build-jdk folder and run `build.sh jdk`.

Copy license file to $JSPD_HOME/cfg/ directory for license application.

**ADDITIONAL SETTINGS FOR DB MONITORING INTERLOCK**

For DB monitoring, modify $JSPD_HOME/cfg/{sid}/imx.prop file.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMX ADDR</td>
<td>IMXDBM address and UDP PORT</td>
</tr>
<tr>
<td>DB ADDR</td>
<td>Address (IP), Port, SID information of monitoring target DB</td>
</tr>
</tbody>
</table>

Performing example
```
# IMX ADDR = DB ADDR
```

**Note1.** Actual IP should be entered, not virtual IP for DB IP

**Note2.** SID should be entered in lower case.

**Note3.** The TXN_ADDR port is the UDP_PORT set in jspd.prop of IMXDBM.
2.1.3. ADDITIONAL SETTINGS BY OS

The following additional settings are required for each OS.

AIX

If you need to collect GC related data (execution time, the number of execution frequency), you need the following setting.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAVA 1.4 or lower</td>
<td>Conduct <code>find. -name*.so</code> command in <code>$JAVA_HOME</code>. Check where *.so files are gathered in the subdirectories. In case of JAVA 32 bit, copy <code>libXmJvmpiSvc_32.so</code> file in the ppc subdirectory where *.so files are gathered. In case of JAVA 64 bit, copy <code>libXmJvmpiSvc_64.so</code> file in the ppc64 subdirectory where *.so files are gathered.</td>
</tr>
<tr>
<td>JAVA 1.5 or higher</td>
<td>Conduct <code>find. -name*.so</code> command in <code>$JAVA_HOME</code>. Check where *.so files are gathered in the subdirectories. In case of JAVA 32 bit, copy <code>libXmJvmtiSvc_32.so</code> file in the ppc subdirectory where *.so files are gathered. In case of JAVA 64 bit, copy <code>libXmJvmtiSvc_64.so</code> file in the ppc64 subdirectory where *.so files are gathered.</td>
</tr>
</tbody>
</table>

Performing example
Java Version 1.4

```
$JSPD_HOME/lib/jni/libXmJvmpiSvc.so
In case of 32 bit
$ cp $JSPD_HOME/lib/jni/libXmJvmpiSvc.so $JAVA_HOME/../../ppc/
In case of 64 bit
$ cp $JSPD_HOME/lib/jni/libXmJvmpiSvc.so $JAVA_HOME/../../ppc64/
After copying the file, change the User rights to the same directory permissions.
$ cd $JAVA_HOME/../../ppc{64}
$ chown root:root libXmJvmpiSvc.so
```

Java Version 1.5 or higher

```
$JSPD_HOME/lib/jni/libXmJvmtiSvc.so
In case of 32 bit
$ cp $JSPD_HOME/lib/jni/libXmJvmtiSvc.so $JAVA_HOME/../../ppc/
In case of 64 bit
$ cp $JSPD_HOME/lib/jni/libXmJvmtiSvc.so $JAVA_HOME/../../ppc64/
After copying the file, change the User rights to the same directory permissions.
$ cd $JAVA_HOME/../../ppc{64}
$ chown root:root libXmJvmtiSvc.so
```

**Note1.** If the owner who installed Java is root, you need root authority.
**Note2.** `$JAVA_HOME` which is mentioned above refers to the JAVA used by the actual WAS.
Sun Solaris
If the OS is Sun, the following additional settings are required.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>Conduct <code>find -name*.so</code> command in $JAVA_HOME. Check where *.so files are gathered in the subdirectories. In case of JAVA 32 bit, copy libgcc_s.so.1 file in the sparcs directory where *.so files are gathered. In case of JAVA 64 bit, copy libgcc_s.so.1_64 file in the sparc9 directory where *.so files are gathered.</td>
</tr>
</tbody>
</table>

Performing example

```
$JSPD_HOME/lib/jni/libgcc_s.so.1
In case of 32 bit
$ cp $JSPD_HOME/lib/jni/libgcc_s.so.1 ${WAS_JAVA}/../sparc/
In case of 64 bit
$ cp $JSPD_HOME/lib/jni/libgcc_s.so.1 ${WAS_JAVA}/../sparc9/
After copying the file, change the User rights to the same directory permissions.
$ cd ${WAS_JAVA}/../sparc9/
$ chown root:root libgcc_s.so.1
```

**Note1.** If the owner who installed Java is root, you need root authority.
**Note2.** $JAVA_HOME which is mentioned above refers to the JAVA used by the actual WAS.

2.1.4 Starting method

After proceeding ADDITIONAL SETTINGS BY OS operation, restart WAS. MaxGauge for Java Agent does not have any special management point because it is fully connected with WAS. Therefore, Startup is started according to the existing WAS Starting method.

2.1.5. MaxGauge for Java WAS Agent Startup

Start IMXOSM when JSPD is started. (JSPD is started up simultaneously with WAS (JVM) Startup)
Start IMXTXN when IMXOSM is started.
Start IMXUTS when IMXOSM is started.

2.2 MaxGauge for Java DB Agent Set (IMXDBM)

2.2.1 Advance Preparation
Oracle Version | Oracle 9i or higher
---|---
OS Disk Size | Agent Set Size : 10MB

**OS User rights**
Create a user who has the same authority as the Oracle installation user or belongs to the DBA group and install **DB Agent**. Linux uses Bash, and Unix uses KSh. Generating method is as follows.

# useradd -d {home-dir} -s {shell Path} -g {oracle gid} -G {oracle groups} MaxGauge for Java
# passwd MaxGauge for Java

**Note1.** If Maxgauge is installed, you do not need to create an OS user, but you can install it as an OS user of MaxGauge.
**Note2.** You can create users in the Windows environment at Control Panel> User Accounts.

**MaxGauge for Java Profile Setting (omitted in Windows environment)**
Add ORACLE_HOME, ORACLE_BASE, ORACLE_SID, and PATH from .profile of the Oracle user to .profile of MaxGauge for Java user to access DBMS.

```bash
PATH=$PATH:$HOME/bin
export PATH
#Oracle config
export ORACLE_BASE=/app/oracle
export ORACLE_HOME=$ORACLE_BASE/product/11.2/db_01
export ORACLE_SID=orcl
#export EDITOR=vi
#Linux config
export CLASSPATH=$ORACLE_HOME/JRE/lib:$ORACLE_HOME/jlib
export PATH=$PATH:$ORACLE_HOME/bin
export SORACLE_HOME/lib/libclntsh.*
export LANG=en-US.UTF-8
```

**Oracle Version**
Check information about Oracle version of the relevant Instance. The method is as follows.

```
SQL> select * from v$version;
```

**Performing example**

```
BANNER
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - Production
PL/SQL Release 11.2.0.1.0 - Production
CORE 11.2.0.1.0 Production
TNS for Linux: Version 11.2.0.1.0 - Production
NLSRTL Version 11.2.0.1.0 - Production
```

**Oracle Instance**
Check a name of the relevant Instance. The confirmation method is as follows. Check the name of the instance. The confirmation method is as follows.

```
SQL> select instance_name from v$instance;
```

<table>
<thead>
<tr>
<th>Performing example</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTANCE_NAME</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>MaxGauge for Java</td>
</tr>
</tbody>
</table>

**Oracle Numa Segment**

Since MaxGauge for Java supports both Uniform Memory Access and Non-Uniform Memory Access (NUMA), it is necessary to check whether the server is NUMA or not. The NUMA verification method through the SID array is as follows.

```
SQL> select sid from v$session;
```

<table>
<thead>
<tr>
<th>Performing example</th>
</tr>
</thead>
<tbody>
<tr>
<td>SID</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td>22</td>
</tr>
<tr>
<td>126</td>
</tr>
<tr>
<td>127</td>
</tr>
<tr>
<td>128</td>
</tr>
</tbody>
</table>

**Note1.** Since NUMA structured servers use distributed segments, the array of SIDs increases by 10 to 100 units. Generally, most Oracle 11g and later versions use NUMA segments.

**Note2.** NUMA that are mentioned here does not mean NUMA architecture. Please note that the Oracle Session Structure Array is referred to as UMA and NUMA for convenience, depending on whether it is located in contiguous memory space or distributed in two or more memory spaces.

**Shared Memory IPC key**

MaxGauge for Java DB Agent access directly (SGA) through IPC key address of shared Memory. SGA direct access through IPC key address of shared memory. The confirmation method of IPC key of the corresponding instance is as follows. (Replaced by SID in Windows environment)

Unix OS (Linux)

$ ipcs -mb (ipcs -m)

<table>
<thead>
<tr>
<th>Performing example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>0x00000000 3702785</td>
</tr>
<tr>
<td>...</td>
</tr>
<tr>
<td>0x00000000 4751378</td>
</tr>
<tr>
<td>0x0992513cc 4784147</td>
</tr>
</tbody>
</table>
Note. If more than two IPC Key value exists in one Instance, check a correct IPC Key value using Oradebug.

The IPC key confirmation method using Oradebug is as follows:

SYS> oradebug setmypid
Statement processed.
SYS> oradebug ipc
Information written to trace file.
SYS> oradebug tracefile name
/u01/app/oracle/admin/orcl/udump/orcl_ora_00000.trc
SYS> ! cat /u01/app/oracle/admin/orcl/udump/orcl_ora_00000.trc

Performing example

... Area #5 'skgm overhead' containing Subareas 5-5
Total size 0000000000003000 Minimum Subarea size 00000000
<table>
<thead>
<tr>
<th>Area</th>
<th>Subarea</th>
<th>Shmid</th>
<th>Stable Addr</th>
<th>Actual Addr</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>4784147</td>
<td>0x00000092000000</td>
<td>0x00000092000000</td>
</tr>
</tbody>
</table>
... 

Note. Check the shmid value of the 'skgm overhead' section, and check the IPC key value of the corresponding shmid using ipcs command.

Oracle PMON

Check the name and owner of the Oracle PMON for that instance. The confirmation method is as follows. (Replaced with Oracle Process name in Windows environment)

$ ps -ef | grep pmon

Performing example

$ ps -ef | grep pmon
oracle 45410 1 0 10:12 ? 00:00:01 ora_pmon_orcl

Network Port

2404 UDP port is used to receive transaction information from the WAS Agent. The confirmation method is as follows:

$ netstat -an | grep 2404

Note. TCP can be confirmed with the netstat command, but UDP can not be confirmed with the netstat command.

2.2.2. Installation Procedure

Windows environment

Note.
Uploading of installation files
MaxGauge for Java requires the following installation files and copies them to the server.

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxGauge for Java_DBM_[OS Ver]_[Oracle Ver].tar</td>
<td>MaxGauge for Java DB Agent install file</td>
</tr>
<tr>
<td>License_.key</td>
<td>License file</td>
</tr>
</tbody>
</table>

Extract (or Unzip) the installation files. We will call \{Extract path\}\MaxGauge for Java\ as %IMX_HOME% and the rest is the same as above.

**Note.** The decompression location may be changed.

The current version of Windows does not support automatic installation. Perform manual installation.

**Performing example**

```plaintext
> md %IMX_HOME%\cfg\{SID}RTS
> copy %IMX_HOME%\cfg\sample* %IMX_HOME%\cfg\{SID}RTS
```

Environment file Setting

Modify environment file in %IMX_HOME%\cfg\{SID}RTS\ for DB Agent Setting.

**Jspd.prop**

The default setting parameters are as follows:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR_ADDR</td>
<td>Enter IP information and port of Data Gatherer.</td>
</tr>
<tr>
<td>TXN_ADDR</td>
<td>Enter IMXDBM connection port information.</td>
</tr>
</tbody>
</table>

**Performing example**

```plaintext
# ${IP}:${TCP_PORT}
WR_ADDR=10.10.202.182:1314

# ${UDP_PORT|UDP_PORT}
TXN_ADDR=2404
```

**Imx.prop**

The default setting parameters are as follows:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB_ADDR</td>
<td>DB IP.LISTENER PORT.sid</td>
</tr>
</tbody>
</table>

**Performing example**

```plaintext
# DB Address, copy address from imx.dbm
# DB_ADDR=127.0.0.1.1521.orcl(IP.Ports.SID)
DB_ADDR=10.10.202.183.1521.orcl112
```

**Note1.** Actual IP should be entered, not virtual IP for DB IP.
**Note2.** PORT means LISTENER PORT of Oracle.
Note3. SID should be entered in lower case.

**common.conf**
The default setting parameters are as follows:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipc_key</td>
<td>Enter SID name.</td>
</tr>
<tr>
<td>pmon_name</td>
<td>Enter Oracle process name.</td>
</tr>
</tbody>
</table>

**Performing example**
```
# Oracle shared memory key
ipc_key=ora112

# Oracle PMON process name
pmon_name=oracle.exe
```

Note1. Please refer to "MaxGauge for Java Administration Guide" for more detail about MaxGauge for Java common.conf Setting.

Creating environment file
In Windows environment, you must manually create the environment file which is used by IMXDBM.
Go to %MAXGAUGE FOR JAVA_HOME%\util\db_setup folder.

**Creating Maxgauge User**
Create a DB User for MaxGauge for Java and authorize.
Connect to SQL*PLUS as SYS User and run `run_by_sys.sql`.

**Performing example**
```
D:\MaxGauge for Java\IXMDBM\util\db_setup>sqlplus / as sysdba
```

Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
SQL> @run_by_sys.sql
Enter MaxGauge USER :maxgauge
Enter password for maxgauge :maxgauge
Enter Default Tablespace for maxgauge :users
Enter Temporary Tablespace for maxgauge :temp

**Creating List.conf**
Create environment file for stat and event information collection of DB used in MaxGauge for Java.
Connect to SQL*PLUS as maxgauge User and run `listconf3.sql`.

**Performing example**
```
D:\MaxGauge for Java\IXMDBM\util\db_setup>sqlplus maxgauge/maxgauge
```
**Creating env**

Create environment file for MaxGauge for Java. Run `mkenv.exe`.

Performing example

D:\MaxGauge for Java\IXMDBM\util\db_setup>mkenv.exe

---

**Note.** Once Env file and list.conf file are created, copy and paste the corresponding files to a following location: `%MAXGAUGE FOR JAVA_HOME%\cfg\{SID}\RTS`

---

Service registration and deletion

The service registration command is as follows. You must run in an input window with administrator authority.

```shell
%IMX_HOME%\lib\imx\imxdbm -c {SID}\RTS -install -H {IMX_HOME}
```

Performing example

```bash
c:\MaxGauge for Java> imxdbm -c IM_RTS -install -H c:\MaxGauge for Java
```

The service deletion command is as follows.

```shell
%IMX_HOME%\lib\imx\imxdbm -c {SID}\RTS -remove -H {IMX_HOME}
```

Performing example

```bash
c:\MaxGauge for Java> imxdbm -c IM_RTS -remove -H c:\MaxGauge for Java
```

Application of license file

Move License file to `%IMX_HOME%\cfg` directory.

---

**Unix / Linux environment**

Uploading of installation files

The following installation files are required to install the WAS Agent, and upload the file in binary format.

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxGauge for Java_DBM_[OS Ver]_[Oracle Ver].tar</td>
<td>MaxGauge for Java DB Agent Set install file</td>
</tr>
<tr>
<td>License_.key</td>
<td>License file</td>
</tr>
</tbody>
</table>

Performing example

Ex) OS: Linux 6.2, Oracle Version: 11.2.0.1, Numa Segment
FTP> put MaxGauge for Java_DBM_linux_64_ora_112_160928.tar
FTP> put License_key

Extraction of the installation files
Unzip the uploaded file into the maxguage user Home Directory. The decompression method is as follows.

$ tar –xvf MaxGauge for Java_DBM_[OS Ver]_[Oracle Ver].tar

Performing example
$ tar –xvf MaxGauge for Java_DBM_linux_64_ora_112_160928.tar

Run MaxGauge for Java environment file
Go to MaxGauge for Java Home and run the environment variable (.mxgrc) file.

$ cd /home/maxaguge/MaxGauge for Java
$.mxgrc

Run Install Script
Perform automation installation using install.sh in Install folder.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBM setup Type</td>
<td>DB Type to be monitored</td>
</tr>
<tr>
<td>Database owner</td>
<td>OS user who operates Oracle Instance</td>
</tr>
<tr>
<td>Conf name</td>
<td>[ORACLE_SID]RTS</td>
</tr>
<tr>
<td></td>
<td>Enter ORACLE_SID in capitals</td>
</tr>
<tr>
<td>IPC Key</td>
<td>Oracle Shared Memory Key of installation</td>
</tr>
<tr>
<td></td>
<td>requirements</td>
</tr>
<tr>
<td>PMON process</td>
<td>Oracle PMON Name of installation requirements</td>
</tr>
<tr>
<td>DBM UDP port</td>
<td>Communication port (Default 2404) with WAS Agent</td>
</tr>
<tr>
<td>Data Gather IP address</td>
<td>DG Slave's installation IP address</td>
</tr>
<tr>
<td>Data Gather Port</td>
<td>Communication port (Default 1314) with DG Slave</td>
</tr>
<tr>
<td>DBM EVV Server port</td>
<td>DBM's internal communication port (Default 2405)</td>
</tr>
<tr>
<td>DB_ADDR IP ADDRESS</td>
<td>Database installation address</td>
</tr>
<tr>
<td>DB_ADDR PORT</td>
<td>Database's LISTENER PORT</td>
</tr>
<tr>
<td>DB_ADDR Database Name</td>
<td>Database's SID</td>
</tr>
<tr>
<td>Oracle Database user</td>
<td>Generate MaxaGauge DB user</td>
</tr>
<tr>
<td>Oracle Database Password</td>
<td>MaxGauge DB user password</td>
</tr>
</tbody>
</table>
Performing example

$ cd $MAXGAUGE FOR JAVA_HOME/install
$. install.sh

Welcome to MaxGauge for Java DBM setup

Enter DBM setup Type: [1:oracle, 2:db2]
1

Enter Database owner: [oracle]
oracle

Enter Maxgauge conf name: [ora112]
ORA112RTS

1) 0xd3ac6c80
Select ipc key: 1
ipc key : d3ac6c80
ora_pmon_orcl
1) ora_pmon_orcl
Select pmon process name: 1
pmon name : ora_pmon_orcl

DBM UDP Port number : [2404]
2404

DataGather IP Address : []
192.168.0.10

DataGather Port number : [1314]
1314

DBM ENV Server Port numbe : [2405]
2405

DB_ADDR IP Address : []
10.10.202.183

DB_ADDR Port number : [1521]
2. DATA COLLECTION LAYER INSTALLATION AND CONFIGURATION

1521

DB_ADDR Database Name (SID): [ORA112]
ora112

Enter Oracle maxgauge user: [maxgauge]
maxgauge

Oracle maxgauge pass: 
******

Default Tablespace for MaxGauge: [USERS]
USERS

Temporary Tablespace for MaxGauge: [TEMP]
TEMP

=================================================================
Conf name ORA112RTS
IPC key 0x3ac6c80
pmon name ora_pmon_ORA112
UDP port 2404
DataGather Address 192.168.0.10:1314
ENV Server Port 2405
DB Address 10.10.202.183.1521.ora112
Maxgauge user maxgauge

=================================================================
Cfg directory created
Make conf files (common.conf, imx.prop, jspd.prop. ...)

Execute run_by_sys ... 
Done.

Make env ...
/home/MaxGauge for Java/YU_RTS/MaxGauge for Java/util/db_setup/mke.sh
version: Linux 11.2.0.3.0 - 64bit
build: Mar 3 2015 11:15:59
sga_base_addr: 0x60000000
s: 0xa5f8   e: 0x9650   p: 0x9488
p: 0x0528   p: 0xc8b38   h: 0xa680
s: 0xc9a0   u: 0x0020   d: 0x2b3f0
v: 0x1138   d: 0x25a28   s: 0x0000
f: 0x0170   n: 0x0010   t: 0x2ba08
s: 0xa5f8   e: 0x9648   e: 1152
db_version: 0xb200300]
Done.

Make list.conf ...
Done.
DBM Installation is complete.

Application of license file
Move License file to $MAXGAUGE FOR JAVA_HOME/cfg directory.

... $ mv $HOME/License.key $INXTERMAX_HOME/cfg

2.2.3. Starting method

Windows environment
Run MaxGauge for Java DB Agent through a services.msc list.
MaxGauge for Java DB Agent Set is registered as a Window Local Service, and executes each service in the Service (Local)

Unix / Linux environment
Run MaxGauge for Java DB Agent through IMXCTL Command.
IMXCTL is a utility to control MaxGauge for Java Agent Set, and there are two methods that use a non-interactive mode method used in the OS command line and an interactive mode method used in the IMXCTL utility. An instruction of IMXCTL utility is as follows.

#Non Interactive Mode Usage:
$ imxctl <start | stop | status | restart > [config_name]
$ imxctl version
#Interactive Mode Usage:
$ imxctl
RTSCTL> < start | stop | status | restart > [config_name]
RTSCTL> <version | quit | exit >
2. DATA COLLECTION LAYER INSTALLATION AND CONFIGURATION

### Note
Please refer to "MaxGauge for Java Administration Guide" for more detail and example about IMXCTL utility.

#### 2.2.4. Exception

**MakeConf Script Error (Windows environment Not applicable)**

If Conf file is not created when executing Install.sh, please refer to the following section.

<table>
<thead>
<tr>
<th>Script Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makecommonconf</td>
<td>Create environment file which is required for Direct Memory Access to Oracle SGA <code>{ORACLE_SID}</code> <code>{IPC_KEY}</code> <code>{PMON_NAME}</code></td>
</tr>
<tr>
<td>Makertsconf</td>
<td>Create environment file for real-time data and log data sending <code>{ORACLE_SID}</code> <code>{RTS_PORT}</code> <code>{DG_IP_ADDRESS}</code> <code>{DG_PORT}</code></td>
</tr>
</tbody>
</table>

**Script Execution Method and Variable Writing Method**

FILE_PATH: `[MaxGauge for Java Home Directory]/MaxGauge for Java/install`

START COMMON FILE CREATE

```bash
$ . makecommonconf {ORACLE_SID} {IPC_KEY} {PMON_NAME}
ex) $ . makecommonconf ORCL 0x992513cc ora_pmon_ORCL
```

START RTS FILE CREATE

```bash
$ . makertsconf {ORACLE_SID} [RTS_PORT] [DG_IP_ADDRESS] [DG_PORT]
ex) $ . makertsconf ORCL 5080 192.168.0.10 7000
```

**Run by sys.sql Error**

If Maxgauge user creation and authorization are failed when executing Install.sh, please refer to the following section.

```bash
$ sqlplus DBA or SYS User Login
```

# MaxGauge for Java user Password, Default Tablespace, Temporary Tablespace

SQL>

CREATE USER maxgauge IDENTIFIED BY &password
DEFAULT TABLESPACE &default_ts
TEMPORARY TABLESPACE &temp_ts;

GRANT RESOURCE TO maxgauge;
GRANT CREATE SESSION TO maxgauge;
GRANT CREATE DATABASE LINK TO maxgauge;
GRANT SELECT_CATALOG_ROLE maxgauge;
GRANT SELECT ANY TABLE TO maxgauge
GRANT CREATE ANY PROCEDURE TO maxgauge
GRANT EXECUTE ON SYS.DBMS_SESSION TO maxgauge
GRANT EXECUTE ON SYS.DBMS_SYSTEM TO maxgauge
GRANT ALTER SESSION TO maxgauge
GRANT ALTER SYSTEM TO maxgauge
GRANT SELECT ANY DICTIONARY TO maxgauge

Env & List.conf Error
If creating Env and List.conf file is failed when executing Install.sh, you can manually create by running mke.sh and listconf3.sql at $MAXGAUGE FOR JAVA_HOME/util/db_setup.

Performing example

# Env Create
$ . mke.sh
version: Linux 11.2.0.3.0 - 64bit
build: Mar 3 2015 11:15:59
sga_base_addr: 0x60000000
s: 0xa5f8 e: 0x9650 p: 0x9488
p: 0x0528 p: 0xcb38 h: 0xa680
s: 0xc9a0 u: 0x0020 d: 0x2b3f0
v: 0x1138 d: 0x25a28 s: 0x0000
f: 0x0170 n: 0x0010 t: 0x2ba08
s: 0xa5f8 e: 0x9648 e: 1152
db_version: 0xb200300]

# List.conf Create
$ sqlplus maxgauge/maxgauge
SQL> @listconf3.sql

Note. When Env file and the list.conf file are created, copy the files to the following location. $MAXGAUGE FOR JAVA_HOME/cfg/{SID}RTS
3. AP Server and Data Storage Layer

Installation and configuration

AP Server and Data Storage Layer consist of Platform.JS, Data Gatherer, and Repository Database. The OS types supported by each item are as follows.

<table>
<thead>
<tr>
<th>Installation and configuration ITEM</th>
<th>Details</th>
<th>Supported OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform.JS</td>
<td>Single UI View module for monitoring and analysis through Client PC</td>
<td>Windows, Unix/Linux</td>
</tr>
<tr>
<td>Data Gatherer</td>
<td>Server-side modules that collect, process, and analyze performance data</td>
<td>Windows, Unix/Linux</td>
</tr>
<tr>
<td>Repository Database</td>
<td>Database storage to store collected data</td>
<td>PostgreSQL (Windows, Unix/Linux)</td>
</tr>
</tbody>
</table>

3.1. Advance Preparation

3.1.1. AP Server Specifications

MaxGauge for Java's AP Server and Data Storage Server Specifications should be prepared in consultation with the client in advance according to the size of the system to be monitored and the amount of data collected and generally it requires following specifications below based on transaction service within 10-nodes and 50-instances.

Separate configuration of Repository DB is recommended, and separate storage server configuration is recommended for large capacity collection.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Minimum Specifications</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported OS</td>
<td>Windows, Linux, HP, AIX, Solaris</td>
<td></td>
</tr>
<tr>
<td>Supported JDK</td>
<td>JDK 1.8 Supported</td>
<td></td>
</tr>
<tr>
<td>CPU(Core)</td>
<td>2CPU(4Core) or higher (1.8GHz or higher)</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>8GB or higher</td>
<td>16G or higher recommended</td>
</tr>
<tr>
<td>Hard Disk</td>
<td>Installation space – within 100GB, Log storage space – Larger than 200GB</td>
<td>Enough space required</td>
</tr>
</tbody>
</table>
**Note.** MaxGauge for Java AP server for data collecting and server for Data Storage are Java DAEMON type program which can be operated in most of the OS where Java is installed, and hard disk can be expanded/decreased according to the size of the system to be monitored and the amount of collected data.

### 3.2. Windows environment

#### 3.2.1. Advance Preparation

Java (JDK 1.8 or higher)

Java is installed on the same server such as Data Gatherer and Platform_JS. Set JAVA_HOME setting in system environment variable.

#### 3.2.2. Installation Procedure (Automatic Installer)

The installation method through the integrated installer is as follows.

Execute MaxGauge for Java integrated installation program (**MaxGauge for Java Installer_Name.exe**).

When the installation wizard runs, **click the Next button**.

![Installation Wizard](image)

Select “Agree” with license terms and click Next.
Select a location where to install MaxGauge for Java.

Click the **Install** button to start the installation. Installation takes about 2 minutes.

When the installation is complete, click the [Finish] button to close the installation wizard.
Note. Platform.JS, Data Gather, and PostgresQL are automatically registered as local services after installation.

3.2.3. Installation Procedure (Manual)

PostgreSQL Manual installation

In this Install Guide, we will skip the installation of PostgreSQL Databases. Please refer to the official PostgreSQL Install Guide for a detailed description of the database installation.

Repository User Creation and Database Setting

1. Run pgAdmin3 to create the Repository User and Database in PostgreSQL.

Right click on Login Role, and then click New Login Role.

2. Enter MaxGauge for Java user information. Type MaxGauge for Java in Role name field of Properties tab. Enter an appropriate password in the Password field in Definition tab.
3. **AP SERVER AND DATA STORAGE LAYER** Installation and configuration

3. Check all permissions in Role authority and click OK.

4. To create a tablespace, right-click on Tablespaces in the Object browser, and click New Tablespace.
5. In the name field in Properties tab, type *MaxGauge for Java* as the Tablespace name. The owner selects MaxGauge for Java from the drop-down list.

6. In the Location in Definition tab, select the location of the tablespace and click OK.
7. Right-click Databases in the Object browser and click New Database to create a MaxGauge for Java Database.

8. In the Properties tab, type *MaxGauge for Java* as the database name in Name field. The owner selects as MaxGauge for Java.

9. In the Definition tab, select UTF8 for Encoding and template0 for Template. Select MaxGauge for Java for Tablespace. Select C for each Collation and Character type and click OK.
Repository Parameter Settings
Set the parameters of the installed PostgreSQL Database as follows.
File location eg) D:\Program Files\PostgreSQL\9.4\data\postgresql.conf

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Recommended Setting (Based on Memory 16GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>shared_buffers</td>
<td>4GB</td>
</tr>
<tr>
<td>work_mem</td>
<td>512MB</td>
</tr>
<tr>
<td>effective_cache_size</td>
<td>1GB</td>
</tr>
<tr>
<td>enable_seqscan</td>
<td>off</td>
</tr>
<tr>
<td>logging_collector</td>
<td>off</td>
</tr>
<tr>
<td>default_transaction_isolation</td>
<td>read uncommitted</td>
</tr>
<tr>
<td>log_truncate_on_rotation</td>
<td>on</td>
</tr>
<tr>
<td>log_rotation_size</td>
<td>0</td>
</tr>
<tr>
<td>wal_sync_method</td>
<td>fsync_writethrough</td>
</tr>
<tr>
<td>constraint_exclusion</td>
<td>partition</td>
</tr>
<tr>
<td>autovacuum_vacuum_threshold</td>
<td>2147483647</td>
</tr>
<tr>
<td>autovacuum_analyze_threshold</td>
<td>2147483647</td>
</tr>
<tr>
<td>checkpoint_segments</td>
<td>32</td>
</tr>
<tr>
<td>track_counts</td>
<td>off</td>
</tr>
<tr>
<td>autovacuum</td>
<td>off</td>
</tr>
</tbody>
</table>
Oracle Manual installation

In this Install Guide section, we will explain Oracle Database installation, therefore we recommend you to install by referring to Oracle’s official Install Guide.

Creation of Repository User and Database Setting
Run SQL*PLUS to create the Repository User and Database in Oracle.

Create tablespace
Create a tablespace which will be used on MaxGauge for Java.

Performing example

```
SQL>create tablespace [tablespace_name] datafile 'LOCATION' size[size]
SQL>extent management local
SQL>segment space management auto;
```

Creating user
Authorize after creating MaxGauge for Java User.

Performing example

```
# By sys or dba User
SQL> create user [user_name] identified by [password] default tablespace [tablespace_name] temporary tablespace temp;
SQL>GRANT RESOURCE TO MaxGauge for Java;
SQL>GRANT CONNECT TO MaxGauge for Java;
SQL>GRANT CREATE SESSION TO MaxGauge for Java;
SQL>GRANT CREATE DATABASE LINK TO MaxGauge for Java;
SQL>GRANT SELECT_CATALOG_ROLE TO MaxGauge for Java;
SQL>GRANT SELECT ANY TABLE TO MaxGauge for Java;
SQL>GRANT EXECUTE ON SYS.DBA_SESSION TO MaxGauge for Java;
SQL>GRANT EXECUTE ON SYS.DBA_SYSTEM TO MaxGauge for Java;
SQL>GRANT EXECUTE ON DBMS_LOCK TO MaxGauge for Java;
SQL>GRANT ALTER SESSION TO MaxGauge for Java;
SQL>GRANT ALTER SYSTEM TO MaxGauge for Java;
SQL>GRANT SELECT ANY DICTIONARY TO MaxGauge for Java;
SQL>GRANT CREATE VIEW TO MaxGauge for Java;
SQL>GRANT CREATE SEQUENCE TO MaxGauge for Java;
SQL>GRANT EXECUTE ON CTXSYS.CTX_DDL FROM MaxGauge for Java;
SQL>GRANT SELECT ON DBA_TAB_PARTITIONS TO MaxGauge for Java;
```

Data Gatherer Manual installation

Extract MaxGauge for Java DG_YYMMDD.tar file.

First install the Slave Data Gatherer. Copy the DGServer_x86_64_1314.exe and DGServer_x86_64_1314.config files from DataGather_S1\bin\services and paste them into DataGather_S1\bin. (DGServer_x86_1314.exe and DGServer_x86_1314.config for 32bit Windows)
**Note.** The copied file is the service file of Data Gatherer.

Rename the two copied files to DGServer_1.exe and DGServer_1.config. Copy DataGather_S1\bin\mxg_obsd\win64\mxg_obsd_x64.exe and paste it into DataGather_S1\bin. (DataGather_S1\bin\mxg_obsd\win32\mxg_obsd.exe for 32bit Windows)

**Note.** The copied file is the observer executable file of Data Gatherer.

Rename the copied file to mxg_obsd_1.exe. The results of steps 1 to 4 are as follows.

![Image of Data Gatherer interface]

Edit DataGather_S1\conf\DGServer.xml for Slave Data Gatherer Setting. The setting items are shown in the table below.

```
<dgserver>
  <config>
    <MaxChargeTime>5</MaxChargeTime>
    <Storage>false</Storage>
    <DG_id>1</DG_id>
    <DG_list1/></DG_list1>
    <DG_port>1914</DG_port>
    <ClientPool>
      <thread_core_size>40</thread_core_size>
      <thread_max_size>80</thread_max_size>
    </ClientPool>
    <DBPool/>
    <db_type>postgres</db_type>
    <conn_ip>127.0.0.1</conn_ip>
    <conn_port>5432</conn_port>
    <sid>/postgres</sid>
    <user>/postgres</user>
    <password>/postgres</password>
    <conn_max_size>10</conn_max_size>
    <partition>true</partition>
  </config>
</dgserver>
```
### 3. AP SERVER AND DATA STORAGE LAYER  
Installation and configuration

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| master         | Set Master option  
|                | • False in case of Slave Data Gatherer |
| dg_id          | ID Setting  
|                | • 1 or higher in case of Slave Data Gatherer |
| dg_port        | Communication Port of Slave Data Gatherer  
|                | • 1314 is recommended for Slave port |
| db_type        | Repository Database type setting  
|                | • postgres in case of PostgreSQL |
| conn_ip        | Repository database IP setting to connect to JDBC |
| conn_port      | Repository database Listener Port Setting to connect to JDBC  
|                | • The default value for PostgreSQL is 5432 |
| sid            | Repository database name setting |
| user           | Repository database User |
| password       | Password of Repository database User |

Execute the following command in administrator authority command window to register Slave Data Gatherer as service.

```plaintext
> sc create DGServer_1 binPath= "Absolute\path\to\DGServer_1.exe"
```

**Note.** The service name can be other than DGServer_1. However, we assume that DGServer_1 is specified in this manual.

Edit the settings of DataGather_S1\conf\DG\common.conf file to set the observer. Setting items are shown in the table below.

```plaintext
obs1=1
obs1_cmd=  
obs1_keyword=  
obs1_keyword2=  
obs1_cpu_limit=80
obs1_mem_limit=30000000
obs1_wait=20
obs1_status_file=dg.status
```

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| obs1_cmd       | Service name of Slave Data Gatherer  
|                | • e.g.) DGServer_1 |
| obs1_keyword   | Part of process name of Slave Data Gatherer  
|                | • e.g.) DGServer |
| obs1_keyword2  | Part of process name of Slave Data Gatherer  
|                | • e.g.) DGServer_1 |

Execute the following command in the administrator authority command window to register the observer of Slave data gatherer as a service.

```plaintext
> sc create DGServer_obsd_1 binPath= "Absolute\Path\to\mxg_obsd_1.exe -f Absolute\Path\to\common.conf -i 10 -D -OTHERD"
```
Note. The service name can be other than DGServer_obsd_1. However, we assume that DGServer_obsd_1 is specified in this manual.

Next, install **Master Data Gatherer.** Copy DGServer_x86_64_1313.exe and DGServer_x86_64_1313.config files from DataGather_M\bin\services and paste in DataGather_M/bin. (DGServer_x86_1313.exe for 32bit Windows)

Rename the two copied files to DGServer_0.exe and DGServer_0.config.

Copy DataGather_M\bin\mxg_obsd\win64\mxg_obsd_x64.exe and paste in DataGather_M\bin. (DataGather_M\bin\mxg_obsd\win32\mxg_obsd.exe for 32bit Windows)

Rename the copied file to mxg_obsd_0.exe. The results of steps 10 to 12 are as follows.

Edit DataGather_M\conf\DGServer.xml for Master Data Gatherer Setting. The setting items are shown in the table below.

```
<server name="DGServer">
  <master>true</master>
  <dg_id>0</dg_id>
  <dg_port>1313</dg_port>
  <dg_list>127.0.0.1:1314</dg_list>
  <thread_core_size>10</thread_core_size>
  <thread_max_size>20</thread_max_size>
  <DBPool>
    <db_type>postgres</db_type>
    <conn_ip>127.0.0.1</conn_ip>
    <conn_port>5432</conn_port>
    <sid></sid>
    <db_type>postgres</db_type>
    <password>postgres</password>
  </DBPool>
</server>
```

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| master         | Set Master option  
|                | ● true in case of Master Data Gatherer |
| dg_id          | ID Setting  
|                | ● 0 in case of Master Data Gatherer |
| dg_port        | Communication Port of Master Data Gatherer  
|                | ● 1313 is recommended for Master Port |
| dg_list        | Enter the information (IP: Port) of Slave Data Gatherers belonging to this Master Data Gatherer, separating with ",".  
|                | ● e.g.) 127.0.0.1:1314,127.0.0.1:1315, ... |
| db_type        | Repository Database type setting  
|                | ● postgres in case of PostgreSQL |
| conn_ip        | Repository database IP setting to connect to JDBC |
| conn_port      | Repository database Listener Port Setting to connect to JDBC  
|                | ● The default value for PostgreSQL is 5432 |
| sid            | Repository database name setting |
| user           | Repository database User |
| password       | Password of Repository database User |

Execute the following command in the administrator authority command window to register Master Data Gatherer as a service.
### 3. AP SERVER AND DATA STORAGE LAYER  
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#### 43

```bash
> sc create DGServer_0 binPath= "Absolute\path\to\DGServer_0.exe"
```

**Note.** The service name can be other than DGServer_0. However, we assume that DGServer_0 is specified in this manual.

Edit the settings of DataGather_M\conf\DG\common.conf file for observer setting. Setting items are shown in the table below.

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| obs1_cmd       | Service name of Master Data Gatherer  
|                | ● e.g.) DGServer_0 |
| obs1_keyword   | Part of process name of Master Data Gatherer  
|                | ● e.g.) DGServer |
| obs1_keyword2  | Part of process name of Master Data Gatherer  
|                | ● e.g.) DGServer_0 |

Execute the following command in the administrator authority command window to register observer of Master Data Gatherer as a service.

```bash
> sc create DGServer_obsd_0 binPath= "Absolute\path\to\mg_obsd_0.exe -f Absolute\path\to\common.conf -i 10 -D -OTHERD"
```

**Note.** The service name can be other than DGServer_obsd_0. However, we assume that DGServer_obsd_0 is specified in this manual.

When setting of Slave and Master is completed, Repository for MaxGauge for Java should be configured in Repository. Run the following command for configuration:

```bash
>  cd DataGather_M\bin  
>  java -jar DGServer.jar install
```

Once it is operated, select 1. **Install Respository.** The Repository is configured in the database that is set in the Server.xml file.

When the configuration of the repository is completed, type 0 to exit. This will complete the basic configuration of the **Data Gatherer.**
Platform.JS Manual installation

The installation method of Platform.JS on Window is as follows.
Extract MaxGauge for Java_WEB_YYMMDD.zip.
Run Configuration.bat.

Performing example

1 : Configurations
2: SSL Settings ( Current state : Disabled )
0 : Exit

Select Number : 1

Step 1. DataGather IP [ Default : 127.0.0.1 ] { BACK : 0 }
Input Text : 10.10.202.182

Step 2. DataGather Port [ Default : 1313 ] { BACK : 0 }
Input Text : 1313

Step 3. Repository DB Type [ Default (1) PostgreSQL ] { BACK : 0 }
1. PostgreSQL
2. Oracle
Select Number : 1

Step 4. Database Server [ Default : 127.0.0.1 ] { BACK : 0 }
Input Text : 10.10.202.98

Step 5. Database Port [ Default : 5432 ] { BACK : 0 }
Input Text : 5432

Step 6. Database Name [ Default : MaxGauge for Java ] { BACK : 0 }
3. AP SERVER AND DATA STORAGE LAYER  Installation and configuration

Input Text: MaxGauge for Java

Step 7. Database User [ Default : MaxGauge for Java ] ( BACK : 0 )
Input Text: MaxGauge for Java

Step 8. Database Password [ Default : MaxGauge for Java ] ( BACK : 0 )
Input Text: MaxGauge for Java

Step 9. Service Port [ Default : 8082 ] ( BACK : 0 )
Input Text: 8899

Do you want to save? 1. Save 2. Cancel [ Default (1)Save ]
Select Number: 1

When the environment configuration is completed, the executable file is added to the same folder.

<table>
<thead>
<tr>
<th>File Name</th>
<th>Create Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmp</td>
<td>2016-06</td>
</tr>
<tr>
<td>utils</td>
<td>2016-06</td>
</tr>
<tr>
<td>configuration.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>configuration.sh</td>
<td>2016-06</td>
</tr>
<tr>
<td>max_cbsd_service_install.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>max_cbsd_service_uninstall.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>platform.js.start.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>platform.js.stop.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>service_install.bat</td>
<td>2016-06</td>
</tr>
<tr>
<td>service_uninstall.bat</td>
<td>2016-06</td>
</tr>
</tbody>
</table>

Run service_install.bat with administrator authority and add it to the service.

3.2.4. Startup and Connection confirmation

MaxGauge for Java Local Services

Platform.JS, Data Gatherer, Postgresql/Oracle Database run individual services in Windows Services (Local) and start individual automatically/manually.

MaxGauge for Java Connection confirmation

To use MaxGauge for Java, you need a chrome browser (We will skip Chrome browser installation - the latest version is recommended) and proceed through the browser in the following steps.
Connect to http://127.0.0.1:8080/MaxGauge for Java/Config on Chrome Web Browser.

**Note.** Enter Host IP and Service Port in where Platform.JS is installed for IP and Port fields.

Connect as a default account. (ID: MaxGauge for Java / PW: manager)

Set configuration.

You must configure at least one **Service Group**, and authorize the connected user with **Service Authority**.

**Note.** Please refer to “MaxGauge for Java Configuration Guide” for more detail about MaxGauge for Java Configuration setting.

In Chrome web browser, connect to http://127.0.0.1:8080/MaxGauge for Java/RTM, enter ID/Password and login. (ID: MaxGauge for Java / PW: manager)
When the **service group** list that is set in the configuration process is displayed, select the **Service Group** to monitor and click OK to load the monitoring view.

### 3.2.5. User-defined Option

**Add Slave Gatherer Process**

A load can occur if one **Slave Data Gatherer** communicates with too many **MaxGauge for Java Agent Sets**. In this case, it is necessary to add **Slave DG**. The method to add **Slave DG** is as follows.

Copy **DataGather_S1** folder in the path where MaxGauge for Java is installed and create **DataGather_S#** folder.

Change names of **DataGather_S#\bin\DGServer_x86_64_1314.exe** file and **DGServer_x86_64_1314.config** file as **DGServer_x86_64_{other port#}**.

Edit **DataGather_S#\conf\DGServer.xml** file and change **dg_id** and **dg_Port**.
**Note.** Please be careful of setting so that other Slave Data Gatherer’s dg_id and dg_port do not duplicate.

Edit DataGather_M\conf\DGServer.xml file and add IP address and Port number on Slave_Gather_List:

```
<dg_list>157.0.0.1:1315,157.0.0.2:1315</dg_list>
```

Register Slave DG # as a service in administrator authority command window.

```
sc create {Service Name} binPath="Absolute\path\to\Data Gatherer_5\bin\DGServer_{bit}.exe"
```

**Note.** The recommended number of slave processes is (Slave 1): (The number of JVM instance <50). However, since 1G memory is allocated to each slave process, it should be added after considering Free Memory. The allocated memory of DG can be changed by editing DGServer_*.config file in each bin folder.

**PostgreSQL Tablespace Setting**

An increase in the amount of data stored in the PostgreSQL Repository can cause disk space shortage. This problem can be solved by creating separate table spaces for individual tables and storing them separately. The method to allocate table space is as follows.

Run pgAdmin3. (MaxGauge for Java Home Directory)/Database/bin/pgAdmin3

Create a new tablespace and enter the name/owner/path.
Identify large tables.

You can specify the tablespace that you created in the table individually.

**Note.** Data storage cycle can be changed in MaxGauge for Java configuration. Please refer to "MaxGauge for Java Configuration Guide" for more detail.

### 3.3. Unix/Linux environment
3.3.1. Advance Preparation

Java (JDK 1.8 or higher)
Java is installed in the same server with Data Gatherer and Platfrom_JS.

3.3.2. Installation Procedure (Manual)

Manual installation is recommended since Automatic installation through MaxGauge for Java Unix/Linux installer is flexible according to customer’s system environment (CDE), and has low utilization.

PostgreSQL Manual installation

In this Install Guide section, it mainly explains about PostgreSQL Database installation. Please refer to Windows Manual installation content which is similar. Please refer to PostgreSQL's official Install Guide for detail of Database installation.

Creating Repository User and authorization setting

Run psql to create Repository user and database.
(Run ./psql in installed folder/bin)

Performing example

```
psql postgres

Postgres=#
CREATE USER MaxGauge for Java PASSWORD 'MaxGauge for Java';
ALTER USER MaxGauge for Java WITH SUPERUSER;
ALTER USER MaxGauge for Java WITH CREATEROLE;
ALTER USER MaxGauge for Java WITH REPLICATION;
ALTER USER MaxGauge for Java WITH VALID UNTIL 'infinity'

Postgres=#
```

Performing example

```
psql template1

Template1=#
```
CREATE TABLESPACE MaxGauge for Java OWNER MaxGauge for Java
LOCATION 'app/postgresql/pgsql/data/pg_tblspc';

CREATE DATABASE MaxGauge for Java
WITH OWNER = MaxGauge for Java
ENCODING = 'UTF8'
TEMPLATE = template0
TABLESPACE = MaxGauge for Java
LC_COLLATE = 'C'
LC_CTYPE = 'C'
CONNECTION LIMIT = -1;

| List of databases
<table>
<thead>
<tr>
<th>Name</th>
<th>Owner</th>
<th>Encoding</th>
<th>Collate</th>
<th>Ctype</th>
<th>Access authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interma$x</td>
<td>MaxGauge for Java</td>
<td>UTF8</td>
<td>C</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Postgres</td>
<td>postgres</td>
<td>UTF8</td>
<td>ko_KR.utf8</td>
<td>ko_KR.utf8</td>
<td>=c/postgres</td>
</tr>
<tr>
<td>template0</td>
<td>postgres</td>
<td>UTF8</td>
<td>ko_KR.utf8</td>
<td>ko_KR.utf8</td>
<td>postgres=CTc/postgres</td>
</tr>
<tr>
<td>template1</td>
<td>postgres</td>
<td>UTF8</td>
<td>ko_KR.utf8</td>
<td>ko_KR.utf8</td>
<td>postgres=CTc/postgres</td>
</tr>
</tbody>
</table>

(4 rows)

| List of tablespaces
<table>
<thead>
<tr>
<th>Name</th>
<th>Owner</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxGauge for Java</td>
<td>MaxGauge for Java</td>
<td>/app/postgresql/pgsql/data/pg_tblspc</td>
</tr>
<tr>
<td>pg_default</td>
<td>postgres</td>
<td></td>
</tr>
<tr>
<td>pg_global</td>
<td>postgres</td>
<td></td>
</tr>
</tbody>
</table>

(3 rows)

**Oracle Manual installation**

In this Install Guide section, it mainly explains about Oracle Database installation. We recommend installing Oracle Database by referring to Oracle’s official Install Guide.

**Creating Repository User and Database Setting**

Run SQL*Plus to create the Repository User and Database in Oracle.

**Creating tablespace**

Create a tablespace which will be used in MaxGauge for Java.

**Performing example**

```
SQL>create tablespace [tablespace_name] datafile '위치' size[size]
SQL>extent management local
SQL>segment space management auto;
```

**Creating user**

Create MaxGauge for Java User and authorize.
Performing example

# By sys or dba User

SQL> create user [user_name] identified by [password] default tablespace [tablespace_name] temporary tablespace temp;
SQL>GRANT RESOURCE TO MaxGauge for Java;
SQL>GRANT CONNECT TO MaxGauge for Java;
SQL>GRANT CREATE SESSION TO MaxGauge for Java;
SQL>GRANT CREATE DATABASE LINK TO MaxGauge for Java;
SQL>GRANT SELECT_CATALOG_ROLE TO MaxGauge for Java;
SQL>GRANT SELECT ANY TABLE TO MaxGauge for Java;
SQL>GRANT EXECUTE ON SYS.DBMS_SESSION TO MaxGauge for Java;
SQL>GRANT EXECUTE ON SYS.DBMS_SYSTEM TO MaxGauge for Java;
SQL>GRANT EXECUTE ON DBMS_LOCK TO MaxGauge for Java;
SQL>GRANT ALTER SESSION TO MaxGauge for Java;
SQL>GRANT ALTER SYSTEM TO MaxGauge for Java;
SQL>GRANT SELECT ANY DICTIONARY TO MaxGauge for Java;
SQL>GRANT CREATE VIEW TO MaxGauge for Java;
SQL>GRANT CREATE SEQUENCE TO MaxGauge for Java;
SQL>GRANT EXECUTE ON CTXSYS.CTX_DDL TO MaxGauge for Java;
SQL>GRANT SELECT ON DBA_TAB_PARTITIONS TO MaxGauge for Java;

Data Gatherer Manual installation

Extract MaxGauge for Java_DG_YYMMDD.tar.

Performing example

$ tar –xvf MaxGauge for Java_DG_YYMMDD.tar

Write DGServer.xml in DGServer_M/conf folder.

```xml
<DefaultOptions>
    <encryption>false</encryption>
    <master>true</master>
    <dg_id>0</dg_id>
    <dg_list>127.0.0.1:1314</dg_list>
    <dg_port>1313</dg_port>
    <ClientPool>
        <thread_core_size>100</thread_core_size>
        <thread_max_size>200</thread_max_size>
    </ClientPool>
    <DBPool>
        <db_type>postgreSQL</db_type>
        <conn_ip>10.10.202.215</conn_ip>
        <conn_port>5432</conn_port>
        <sid>intermx1</sid>
        <user>intermax</user>
        <password>intermax</password>
        <conn_init_size>50</conn_init_size>
        <conn_max_size>100</conn_max_size>
        <partition>true</partition>
    </DBPool>
    <Oracle>
```
### Installation and configuration

#### Parameter Name | DESCRIPTION
---|---
**master** | Set Master option  
  - true in case of Master Data Gatherer
**dg_id** | ID Setting  
  - 0 in case of Master Data Gatherer
**dg_port** | Communication Port of Master Data Gatherer  
  - 1313 is recommended for Master Port
**dg_list** | Enter IP: Port of Slave Data Gatherer belonging to this Master Data Gatherer, separating with ",".  
  - e.g.) 127.0.0.1:1314, 127.0.0.1:1315, ...
**db_type** | Repository Database type setting  
  - postgres in case of PostgreSQL  
  - oracle in case of Oracle
**conn_ip** | Repository database IP setting to connect to JDBC
**conn_port** | Repository database Listener Port Setting to connect to JDBC  
  - The default value for PostgreSQL is 5432  
  - The default value for Oracle is 1521
**sid** | Repository database name setting
**user** | Repository database User
**password** | Password of Repository database User

Write DGServer.xml in DGServer_S1/conf folder.
I
ntermax 5.2

Installation and Architecture Guide

dg_port | Communication Port of Slave Data Gatherer
| 1314 is recommended for Slave port

db_type | Repository Database type setting
| postgres in case of PostgreSQL

conn_ip | Repository database IP setting to connect to JDBC

conn_port | Repository database Listener Port Setting to connect to JDBC
| The default value for PostgreSQL is 5432

sid | Repository database name setting

data | Repository database User

When setting of Slave and Master is completed, Repository for MaxGauge for Java should be configured in Repository. Run the following command for configuration.

```
> cd DataGather_M/bin
> java -jar DGServer.jar install
```

The Install Menu appears as shown below, and the Repository starts the configuration operation on the database.

1. Select install Repository.

```
********** DataGather Install Menu **********
1. Install Repository
2. Remove Repository
3. Get Repository Script
4. Exit
SELECT>1
```

Enter "N" in case of initial installation, and enter "Y" in case of reinstallation to keep existing environment setting information.

```
Do you ever have installed in this repository? [Y/N]: N
Input Number of Database: 2
Set Common Repository Tables: 155
Append Oracle Repository Tables: 165
```

Input Number of Databases: 2 means the number of DB Instance to be monitored of the client. Enter the number of the object to be monitored through imxdbm module (it is not necessary to enter the value when imxdbm module is not installed).

The reason why the corresponding value is because it is needed to be used as a reference value for creating a sub-partition when a partition table is saved in performance data collected through imxdbm. (If you do not enter, the default partition table will be created only.)

Enter Table Tablespace for MaxGauge for Java: MaxGauge for Java_ts (Enter created tablespace name)

```
Enter Table Tablespace for InterMax: intermax_ts
Table Tablespace for InterMax: intermax_ts
Enter Index Tablespace for InterMax: intermax_ts
```

Enter Index Tablespace for MaxGauge for Java [MaxGauge for Java_ts] : MaxGauge for Java_ts (If you want to separate the index tablespace, enter the tablespace name. If you are using the default tablespace, you can do enter the same value.)
When all the inputs are completed, the related table creation and configuration operation is completed and the message is displayed as described above.

Once the repository configuration is completed, enter 0 to exit.

Try booting from the $MAXGAUGE FOR JAVA_HOME/ Bin folder, Data Gather is started.

Platform.JS Manual installation

Platform.JS installation method is as follows.
Extract MaxGauge for Java_WEB_YYMMDD.zip.
Run Configuration.sh.
Performing example

========================================================================================================
<table>
<thead>
<tr>
<th>PlatformJS Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 : Configurations</td>
</tr>
<tr>
<td>2: SSL Settings ( Current state : Disabled )</td>
</tr>
<tr>
<td>0 : Exit</td>
</tr>
<tr>
<td>Select Number : 1</td>
</tr>
<tr>
<td>Step 1. DataGather IP [ Default : 127.0.0.1 ] ( BACK : 0 )</td>
</tr>
<tr>
<td>Input Text : 10.10.10.100</td>
</tr>
<tr>
<td>Step 2. DataGather Port [ Default : 1313 ] ( BACK : 0 )</td>
</tr>
<tr>
<td>Input Text : 1313</td>
</tr>
<tr>
<td>Step 3. Repository DB Type [ Default (1)PostgreSQL ] ( BACK : 0 )</td>
</tr>
<tr>
<td>1 PostgreSQL</td>
</tr>
<tr>
<td>2 Oracle</td>
</tr>
</tbody>
</table>
Select Number : 1

Step 4. Database Server [ Default : 127.0.0.1 ] ( BACK : 0 )
Input Text : 10.10.10.100

Step 5. Database Port [ Default : 5432 ] ( BACK : 0 )
Input Text : 5432

Step 6. Database Name [ Default : MaxGauge for Java ] ( BACK : 0 )
Input Text : MaxGauge for Java

Step 7. Database User [ Default : MaxGauge for Java ] ( BACK : 0 )
Input Text : MaxGauge for Java

Step 8. Database Password [ Default : MaxGauge for Java ] ( BACK : 0 )
Input Text : MaxGauge for Java

Step 9. Service Port [ Default : 8082 ] ( BACK : 0 )
Input Text : 8899

Do you want to save ? 1.Save 2.Cancel [ Default (1)Save ]
Select Number : 1

When the environment configuration is completed, the executable file is added to the same folder.

1. Once you run Platformjs.start.sh, PlatformJS Startup option is displayed.
   - 1 If selected, the service will be started by default as a back-ground service with log output of the operational level (The default selection is 1)
   - 2 If selected, the service will be started with the debug level log output as console mode.

3.3.3. Starting method

MaxGauge for Java PlatformJS Startup

It starts once you run PlatformJS.start.sh and select one option displayed.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release Mode</td>
<td>Run PlatformJS as Background mode</td>
</tr>
</tbody>
</table>
MaxGauge for Java Setting and confirmation method

To use MaxGauge for Java, you need a chrome browser (We will skip Chrome browser installation - the latest version is recommended) and proceed through the browser in the following steps.

Connect to [http://127.0.0.1:8080/MaxGauge for Java/Config](http://127.0.0.1:8080/MaxGauge for Java/Config) on Chrome Web Browser.

**Note.** IP and Port enter the host IP and service port where Platform.JS is installed.

Connect as a default account. (ID: MaxGauge for Java / PW: manager)

Set Configuration. You must configure at least one **Service Group**, and authorize the connected user with **Service Authority**.

**Note.** Please refer to “MaxGauge for Java Configuration Guide” for more detail about MaxGauge for Java Configuration setting.

In Chrome web browser, connect to [http://127.0.0.1:8080/MaxGauge for Java/RTM](http://127.0.0.1:8080/MaxGauge for Java/RTM), enter ID/Password and login. (ID: MaxGauge for Java / PW: manager)
When the service group list that is set in the configuration process is displayed, select the Service Group to monitor and click OK to load the monitoring view.
4. Appendix

4.1 MaxGauge for Java Option Setting by WAS vendor

As described in Chapter 2, the MaxGauge for Java option differs depending on the Java version.

**Java Version 1.7 or higher**

```
-noverify -Djspd.wasid={WAS_ID} -javaagent:%JSPD_HOME%/lib/jspd.jar
```

**Java Version 1.5 or higher**

```
-Djspd.wasid={WAS_ID} -javaagent:%JSPD_HOME%/lib/jspd.jar
```

**Java Version 1.4**

```
-Djspd.wasid={WAS_ID} -Xbootclasspath/p:%JSPD_HOME%/lib/jspd.jar
```

*Note.* For each WAS-specific MaxGauge for Java JSDP option setting, see the following chapters.

4.1.1. JEUS MaxGauge for Java Option Setting

Apply the MaxGauge for Java option to `$JEUS_HOME/config/hostname/JEUSMain.xml`. Insert between `<command-option>`, </command-option> tags. If the existing option is applied, insert in after the existing option.

```xml
<command-option>
-ksjpds.wasid=1
-javaagent:/home/dh/intmax/jspd/lib/jspd.jar
</command-option>
```
Note. Perform a backup before modifying the script so that you can restore it when problem occurs.

4.1.2. WebLogic MaxGauge for Java Option Setting

Apply the MaxGauge for Java option to \{Domain directory(same as $DOMAIN_HOME)}/bin/StartWeblogic.sh. Export MAXGAUGE FOR JAVA_OPTION and input MAXGAUGE FOR JAVA_OPTION in the JVM run script.

Note1. Perform a backup before modifying the script so that you can restore it when problem occurs.

Note2. Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.
4. Appendix

4.1.3. WebSphere MaxGauge for Java Option Setting

Connect WebSphere Web console.

Server -> Server Types -> WebSphere application server -> Click "server1"

Click Process Definition

Click Java Virtual Machine

Apply MaxGauge for Java option in Generic JVM arguments section
Note. Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

### 4.1.4. Tomcat MaxGauge for Java Option Setting

Apply MaxGauge for Java Option in $CATALINA_HOME/bin/catalina.sh.

JAVA_OPTS = "$JAVA_OPTS:$MAXGAUGE FOR JAVA_OPTION"

**Note1.** Perform a backup before modifying the script so that you can restore it when problem occurs.

**Note2.** Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

### 4.1.5. JBoss MaxGauge for Java Option Setting

Depending on the operation mode, the position of MaxGauge for Java Option to insert is different.

Apply MaxGauge for Java Option in $JBOSS_HOME/bin/standalone.sh for Standalone mode.

Apply MaxGauge for Java Option in $JBOSS_HOME/domain/configuration/host.xml for Multiple Instances mode.
4. Appendix

**Note.** In case of JBoss7 which is OSGI class loader structure, it should be additionally applied in standalone.conf or domain.conf as follows.

**Note1.** Perform a backup before modifying the script so that you can restore it when problem occurs.

**Note2.** Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

### 4.1.6. Resin MaxGauge for Java Option Setting

Depending on the Resion version, the position to apply MaxGauge for Java Option is different. In Resin 2.x/3.0.x, MaxGauge for Java Option is input on JAVA_OPTIONS relating tag on $RESIN_HOME/bin/httpd.sh, prefixed with –J.

For example, input -Djspd.wasid={WAS ID} -J javaagent:$.JSPD_HOME/lib/spd.jar.

In Resin 3.1.x, apply MaxGauge for Java option on jvm-arg tag in Server tag in $RESIN_HOME/conf/resion.conf.

For example, write <jvm-arg>Djspd.wasid={WAS ID}</jvm-arg>

<jvm-arg>javaagent:.JSPD_HOME/lib/spd.jar</jvm-arg>

In Resin 4.x, apply MaxGauge for Java Option on jvm-arg tag of $RESIN_HOME/conf/resion.xml.

Note1. Perform a backup before modifying the script so that you can restore it when problem occurs.

Note2. Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

### 4.1.7. OC4J(Oracle Containers for J2EE) MaxGauge for Java
Option Setting

Depending on the operation method and the startup method, the position of MaxGauge for Java Option is changed. The standalone method applies MaxGauge for Java Option to Startup script that starts up oc4j.jar.

The Multiple Instances method applies MaxGauge for Java Option to $OC4J_HOME/opmn/conf/opmn.xml <data id="java-options" value="" /> tag.

Note1. Perform a backup before modifying the script so that you can restore it when problem occurs.

Note2. Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

4.1.8. GlassFish MaxGauge for Java Option Setting

Apply MaxGauge for Java Option to GlassFish Administration Console or GlassFish_HOME/domains/domain1/config/domain.xml.

*In terms of GlassFish which is OSGI class loader structure, it should be added to osgi.properties as follows.
4. Appendix

**Note1.** Perform a backup before modifying the script so that you can restore it when problem occurs.

**Note2.** Depending on the vendor version or configured structure, the position to input MaxGauge for Java Option may vary slightly.

**Note.** Perform a backup before modifying the script so that you can restore it when problem occurs.