



# Utility Methods

## *CG Utils*

Version 1.17-SNAPSHOT

2017-11-30

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*Table 1. History*

Date	Author	Detail
2017-09-06	bcouetil	New documentation + minor changes

# 1. Introduction

webMethods allow java development via java WM services.

CgUtils offers some utility class to enhance the possibilities and greatly ease the use of Java development on webMethods servers.

## 2. cg.wm.utils.ConfigUtils

ConfigUtils help you handle configuration in an agile way. Values are first looked for in Extended Settings, then in database, then in config folder of the IS, then in config folder of the package. Values are stored in cache.

This is a key enabler for devOps deployment involving containers such as Docker.

### *ConfigUtils methods*

```
public static void resetCgUtilsCache() throws cg.wm.utils.ano.CgException;

public static java.util.List getConfigFileNames(boolean) throws cg.wm.utils.ano.CgException;

public static java.lang.String getISName() throws cg.wm.utils.ano.CgException;

public static java.lang.String getParameter(cg.wm.utils.CgParam) throws cg.wm.utils.ano.CgException;

public static java.lang.String getParameter(java.lang.String) throws cg.wm.utils.ano.CgException;

public static java.lang.String getParameter(java.lang.String,java.lang.String) throws cg.wm.utils.ano.CgException;

public static void healthCheck() throws cg.wm.utils.ano.CgException;

public static void clearCache();

public static boolean isWindowsEnvir();

public static boolean checkUseDB() throws cg.wm.utils.ano.CgException;
```

## 3. cg.wm.utils.XmlUtils

XmlUtils offers utility methods for handling XML.

### *XmlUtils methods*

```
public static void copyXmlSectionFromFile(java.lang.String,java.lang.String,java.io.FileOutputStream) throws cg.wm.
utils.ano.CgException;

public static java.lang.String extractSection(java.lang.String,java.lang.String) throws cg.wm.utils.ano.CgException;

public static void validateXml(java.io.InputStream,java.io.InputStream) throws cg.wm.utils.ano.CgException;

public static void validateXml(java.io.InputStream,java.lang.String) throws cg.wm.utils.ano.CgException;

public static void validateXml(java.lang.String,java.lang.String) throws cg.wm.utils.ano.CgException;

public static void deleteLastXmlTag(java.lang.String) throws cg.wm.utils.ano.CgException;

public static void deleteLastXmlTag(java.io.RandomAccessFile) throws cg.wm.utils.ano.CgException;

public static boolean hasXmlProlog(java.lang.String) throws cg.wm.utils.ano.CgException;

public static void clearCache();

public static java.lang.Object unmarshal(java.lang.String,java.lang.Class) throws cg.wm.utils.ano.CgException;

public static javax.xml.parsers.DocumentBuilder getXmlParser(java.lang.String) throws cg.wm.utils.ano.CgException;

public static java.lang.String marshal(java.lang.Object,java.lang.Class,java.lang.Boolean,com.sun.xml.bind.marshaller
.NamespacePrefixMapper) throws cg.wm.utils.ano.CgException;
```

## 4. cg.wm.utils.file.FileUtils

FileUtils offers utility methods for handling files.

### *FileUtils methods*

```
public static void copyFile(java.lang.String, java.lang.String) throws cg.wm.utils.ano.CgException;

public static int countLines(java.lang.String) throws java.io.IOException;

public static boolean copyMostOfFileEnd(java.lang.String, java.lang.String, java.io.RandomAccessFile) throws cg.wm.utils.ano.CgException;

public static void createFullPath(java.lang.String);

public static void copyLineByLine(java.lang.String, java.lang.String, java.lang.String, boolean, java.io.PrintStream) throws cg.wm.utils.ano.CgException;

public static void writeStringToFile(java.lang.String, java.lang.String) throws cg.wm.utils.ano.CgException;

public static boolean isDirEmpty(java.lang.String);

public static boolean moveFile(java.lang.String, java.lang.String, java.lang.String);

public static boolean zipFile(java.lang.String, java.lang.String, boolean, java.lang.String) throws cg.wm.utils.ano.CgException;

public static void deleteRecursivOldFiles(java.io.File, long);

public static void deleteRecursivOldFiles(java.lang.String, int);

public static boolean isFileComplete(java.io.File) throws cg.wm.utils.ano.CgException;

public static void cleanFile(java.lang.String) throws java.io.FileNotFoundException;

public static java.lang.String fileToString(java.lang.String) throws cg.wm.utils.ano.CgException;

public static java.util.Set getServiceTypes(java.lang.String) throws cg.wm.utils.ano.CgException;

public static boolean isFileUnlocked(java.io.File) throws cg.wm.utils.ano.CgException;

public static void writeInClipboard(java.lang.String);

public static void delete(java.io.File) throws cg.wm.utils.ano.CgException;

public static long getSize(java.lang.String) throws cg.wm.utils.ano.CgException;

public static void exists(java.lang.String);

public static java.lang.String[] listFiles(java.lang.String, java.lang.String);
```

# 5. cg.wm.utils.idata.IDataHelper

IDataHelper offers utility methods for transcoding various data types from/to IData.

## *IDataHelper methods*

```
public static com.wm.data.IData objectToIData(java.lang.Object,boolean) throws cg.wm.utils.ano.CgException;

public static java.lang.Object iDataToObject(com.wm.data.IData,java.lang.Class,boolean) throws cg.wm.utils.ano.CgException;

public static void applyFunctionOnKeys(com.wm.data.IData,java.util.function.Function);

public static void iDataToFile(com.wm.data.IData,java.lang.String) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData fileToIData(java.lang.String) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData xmlToIDataWithoutArrays(java.lang.String);

public static java.lang.String iDataToXML(com.wm.data.IData,java.lang.String);

public static java.lang.String iDataToJson(com.wm.data.IData,boolean,boolean,boolean) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData jsonToIData(java.lang.String) throws cg.wm.utils.ano.CgException;

public static java.lang.String iDataToString(com.wm.data.IData);

public static void removeNullValuedFields(com.wm.data.IData);

public static com.wm.data.IData stringsToDoubles(com.wm.data.IData) throws cg.wm.utils.ano.CgException;

public static COM.activesw.api.client.BrokerEvent iDataToBrokerEvent(java.lang.String,com.wm.data.IData) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData brokerEventToIData(COM.activesw.api.client.BrokerEvent,boolean) throws java.lang.Exception;

public static void applyFunctionOnStrings(com.wm.data.IData,java.util.function.Function);

public static com.wm.data.IData xmlToIData(java.lang.String,java.lang.String[]);

public static com.wm.data.IData xmlToIData(java.lang.String,java.lang.String);

public static java.lang.Object iDataToJaxbObject(com.wm.data.IData,java.lang.Class) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData jaxbObjectToIData(java.lang.Object,java.lang.Class,java.lang.String[]) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData jaxbObjectToIData(java.lang.Object,java.lang.Class,java.lang.String) throws cg.wm.utils.ano.CgException;

public static com.wm.data.IData jaxbObjectToIDataWithoutArrays(java.lang.Object,java.lang.Class) throws cg.wm.utils.ano.CgException;
```

## 6. cg.wm.utils.idata.FIData[XPath]

Do you now Values() IData implementation ? You should, this is a undocumented yet wonderful class that ease the IData usage with its verbose cursors. FIData[Xpath] is a safe-from-update implementation that enhance a bit more this concept, transforming a nightmare IData mapping to an easy experience.

### *FIData[XPath] example*

```
// GET
IData iData = IDataFactory.create();
String nullValueFIData = new FIData(iData).get("this").get("path").get("doesNot", 0).getString("exist");
String nullValueFIDataXPath = new FIDataXPath(iData).getString("/this/path/doesNot[0]/exist");
Assert.assertNull("Should be null", nullValueFIData);
Assert.assertNull("Should be null", nullValueFIDataXPath);

// REMOVE
new FIData(iData).get("this").get("path").get("doesNot", 1).remove("exist");
new FIDataXPath(iData).getString("/this/path/doesNot[1]/exist");
```



## 7. cg.wm.utils.wmcall.WmHelper

WmHelper plays the role of an interface between your code and WM official API. A local mode can be activated to fake API calls when playing unit and integration tests in Eclipse and on Jenkins.

### *WmHelper methods*

```
public static void setTestMode(boolean,boolean,boolean);
public static void setTestMode(cg.wm.utils.wmcall.WmCall);
public static void setTestMode(java.util.List);
public static void setTestMode();
public static void activateScheduledTask(java.lang.String) throws cg.wm.utils.ano.CgException;
public static java.lang.String getContextID(boolean);
public static java.lang.String[] getContextIDStack();
public static java.lang.String getDefaultEncoding() throws cg.wm.utils.ano.CgException;
public static java.lang.String getExtendedSetting(java.lang.String);
public static java.lang.String getLatestAuditStats(int) throws cg.wm.utils.ano.CgException;
public static com.wm.data.IData getNodeData(java.lang.String) throws cg.wm.utils.ano.CgException;
public static java.lang.String getPackageDefaultConfigFolder(java.lang.String);
public static java.lang.String getPackageNameForServiceCaller();
public static com.wm.data.IData getPipelineFromAudit(java.lang.String,boolean) throws cg.wm.utils.ano.CgException;
public static java.lang.String getServerConfigFolder();
public static java.lang.String getServerHostPort();
public static java.lang.String getServiceName(boolean);
public static java.lang.String injectSqlIsCoreAudit(java.lang.String) throws cg.wm.utils.ano.CgException;
public static com.wm.data.IData invokeWmService(java.lang.String,com.wm.data.IData) throws cg.wm.utils.ano.CgException;
public static void publish(com.wm.data.IData,java.lang.String,boolean) throws cg.wm.utils.ano.CgException;
public static int purgeIsCoreAudit(int) throws cg.wm.utils.ano.CgException;
public static com.wm.data.IData remoteInvokeMultiNodes(java.lang.String,java.lang.String,com.wm.data.IData) throws cg.wm.utils.ano.CgException;
public static void resetServerCache() throws com.wm.app.b2b.server.ostore.OStoreException;
public static void resetServiceCache(java.lang.String) throws com.wm.app.b2b.server.ostore.OStoreException;
public static void setServiceAudit(java.lang.String,boolean,boolean);
public static int suspendScheduledTask(java.lang.String) throws cg.wm.utils.ano.CgException;
public static boolean createScheduledTask(java.lang.String,com.wm.data.IData,int) throws cg.wm.utils.ano.CgException;
public static void sftpPut(java.lang.String,java.lang.String,java.lang.String) throws cg.wm.utils.ano.CgException;
public static com.wm.data.IData getMessengersInfo() throws cg.wm.utils.ano.CgException;
public static void setCurrentThreadProcessChecker(cg.wm.utils.wmcall.CgProcessChecker);
```

```
public static void handleExceptionInWm(java.lang.String,java.lang.String,java.lang.String,java.lang.Throwable,com.wm
.data.IData) throws cg.wm.utils.ano.CgException;

public static void raiseCgTopLevelException(java.lang.String,java.lang.String,java.lang.String,java.util.Map,java.lang
.Throwable) throws cg.wm.utils.ano.CgException;

public static void raiseCgTopLevelException(java.lang.String,java.lang.String,java.lang.String,com.wm.data.IData,com.wm
.data.IData[]) throws cg.wm.utils.ano.CgException;

public static void raiseCgTopLevelException(java.lang.String,java.lang.String,java.lang.String,java.util.Map,java.lang
.Throwable,boolean) throws cg.wm.utils.ano.CgException;

public static void setTriggerFilter(java.lang.String,java.lang.String);

public static java.util.List getCachedServicesList();

public static java.lang.String getLogDir();

public static void logServerLog(java.lang.String,java.lang.String);

public static com.wm.data.IData[] synchronizeAllDocs();

public static void waitForInternalErrorHandling();

public static void traceTopLevelException(java.lang.Throwable);

public static java.lang.String getTopLevelPackageName();

public static java.lang.String getTopLevelServiceName();

public static com.wm.data.IData xmlToIDataWithoutArrays(java.lang.String);

public static java.lang.String iDataToXML(com.wm.data.IData,java.lang.String);

public static com.wm.data.IData getServerStats();

public static com.wm.data.IData getTransportInfo() throws cg.wm.utils.ano.CgException;

public static java.lang.String getServerRootFolder();

public static void setFailureOnInvoke(int,java.lang.String,java.lang.String);

public static com.wm.data.IData xmlToIData(java.lang.String,java.lang.String);

public static com.wm.data.IData xmlToIData(java.lang.String,java.lang.String[]);

public static java.lang.String getPackageName(boolean);
```

## 8. cg.xml.utils.wmcall.CgProcessChecker

On webMethods, when we do publish/subscribe development the BPM style, automating tests is a nightmare, since we loose the hand on the treatment the second the first document is published. We just have to wait for the end to end process to end, and expect the process went well in between.

CgProcessChecker is another key enabler of agility in webMethods development. Usable either in flow or java, this simple interface has to be inherited from to allow a single thread process, systematic check of documents published, database state, filesystem state, before calling the next service using the same thread, always keeping control of the end to end process.

### *CgProcessChecker interface*

```
/**
 * This class has to be inherited from if Integration Tests are performed, either in Eclipse or on IS.
 * On IS, the callNextService function is ignored if the publishElseDirectCall field in WmHelper.setTestMode(...) is set
 * to true.
 *
 * @author BCT
 * @version 9.7.1
 */
public class CgProcessChecker {

    /** Constant <code>LOGGER</code>. */
    private static final org.slf4j.Logger LOGGER = org.slf4j.LoggerFactory.getLogger(CgProcessChecker.class);

    /**
     * <p>Constructor for CgProcessChecker.</p>
     */
    public CgProcessChecker() {
        // to avoid default public constructor
    }

    /**
     * <p>
     * callNextService.
     * </p>
     *
     * @param publishedDoc a {@link com.wm.data.IData} object.
     * @param docTypeName a {@link java.lang.String} object.
     * @throws CgException the cg exception
     */
    public void callNextService(IData publishedDoc, String docTypeName) throws CgException {
        // Meant to be overridden
        LOGGER.trace("Nothing in callNextService() by default, parameters = " + docTypeName + publishedDoc.getClass());
    }

    /**
     * <p>
     * checkDatabase.
     * </p>
     *
     * @param publishedDoc a {@link com.wm.data.IData} object.
     * @param docTypeName a {@link java.lang.String} object.
     * @return a boolean.
     * @throws CgException the cg exception
     */
    protected boolean checkDatabase(IData publishedDoc, String docTypeName) throws CgException {
        // Meant to be overridden
        LOGGER.trace("Nothing in checkDatabase() by default, parameters = " + docTypeName + publishedDoc.getClass());
        return true;
    }
}
```

```

/**
 * <p>
 * checkFileSystem.
 * </p>
 *
 * @param publishedDoc a {@link com.wm.data.IData} object.
 * @param docTypeName a {@link java.lang.String} object.
 * @return a boolean.
 * @throws CgException the cg exception
 */
protected boolean checkFileSystem(IData publishedDoc, String docTypeName) throws CgException {
    // Meant to be overridden
    LOGGER.trace("Nothing in checkFileSystem() by default, parameters = " + docTypeName + publishedDoc.getClass());
    return true;
}

/**
 * <p>
 * checkPublishedDoc.
 * </p>
 *
 * @param publishedDoc a {@link com.wm.data.IData} object.
 * @param docTypeName a {@link java.lang.String} object.
 * @return a boolean.
 * @throws CgException the cg exception
 */
protected boolean checkPublishedDoc(IData publishedDoc, String docTypeName) throws CgException {
    // Meant to be overridden
    LOGGER.trace(
        "Nothing in checkPublishedDoc() by default, parameters = " + docTypeName + publishedDoc.getClass());
    return true;
}

```

# 9. Appendix

## 9.1. Revision marks

*Differences since last tag*

