

## Overview and Planning (Impact) - Tivoli Netcool/Impact Wiki

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This section includes overview and planning information for IBM Tivoli Netcool/Impact. The following topics are available:

### Netcool Impact 7.1. system requirements

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#### About the Software Product Compatibility Reports Portal

The most up-to-date information about supported hardware, software, browsers and operating systems is provided by the IBM® Software Product Compatibility Reports at the following URL:

<http://pic.dhe.ibm.com/infocenter/prodguid/v1r0/clarity/index.html>

Use the Software Product Compatibility Reports portal to generate reports by product to determine what system requirements are supported.

#### Netcool/Impact 7.1. Detailed System Requirements Report

[Hardware Requirements Report Netcool Impact 7.1.](#)

[Prerequisites for Netcool Impact 7.1.](#)

[Hypervisors for Netcool Impact 7.1.](#)

For your convenience the Detailed System Requirement Report is posted here. The format of this of report now includes operating systems, hypervisors, prerequisites, hardware and the packaging list in one report. You can also switch between the main release and maintenance release requirements. Netcool/Impact 7.1 runs on Linux operating systems only.

Netcool/Impact 7.1.0.1 currently runs on Windows, Linux, Linux on System z, AIX , and Solaris operating systems. The latest version of Impact 7.1 is 7.1.0.7.

[Detailed systems requirement report.](#)

#### Tips:

Read the legend at the top of the report. Click on the additional information icon to view more details.

When you generate a report you can bookmark it to your browser using the Regenerate Anytime feature.

### Prerequisite Scanner Configuration Files for Impact 7.1 Fixpack Releases

#### How to use

Download and install the latest Prerequisite Scanner from [Fix Central](#) for your operating system.

#### UNIX/Linux

1. Download the appropriate .cfg file for your Impact fixpack version.
2. Copy the .cfg file to the UNIX\_Linux/ directory under your Prerequisite Scanner installation. e.g.
  - 1.2.0.18-Tivoli-PRS-Unix-fp0001/UNIX\_Linux/NCI\_07010017.cfg
3. Set an environmental variable for the Impact installation you want to check. Only one of these variables should be set at any time.
  - export IMPACT\_PREREQ\_BOTH=True
  - export IMPACT\_PREREQ\_GUI=True

- export IMPACT\_PREREQ\_IMPACT=True

4. Run the scanner tool specifying the fixpack version you want to check. For example,  
./prereq\_checker.sh "NCI 07010017"

### Windows

1. Download the appropriate .cfg file for your Impact fixpack version.
2. Copy the .cfg file to the Windows/ directory under your Prerequisite Scanner installation e.g.
  - 1.2.0.18-Tivoli-PRS-Windows-fp0001\Windows\NCI\_07010017.cfg
3. Set an environmental variable for the Impact installation you want to check. Only one of these variables should be set at any time.
  - set IMPACT\_PREREQ\_BOTH=True
  - set IMPACT\_PREREQ\_GUI=True
  - set IMPACT\_PREREQ\_IMPACT=True
4. Run the scanner tool specifying the fixpack version you want to check. For example,  
prereq\_checker.bat "NCI 07010017"

## Getting Started with Netcool/Impact

This document is written for an IT architect or project manager who is new to Impact and needs to understand, at a high level, the steps involved in developing an Impact solution. This document does not get into the technical "click here" details. A "hands-on" person interested in actually configuring Impact can start with this document but will then want to move on to the Impact Administration Guide or the Impact Solutions Guide ([link](#)).

This document will start with a high-level overview of how Impact is used and then will expand upon the overview by discussing an example Impact project. For the example project, the document will define a simple IT Operations work flow and explain how Impact is used to automate this work flow.

The appendix discusses two additional Impact projects. These projects build upon the first project, automating more of what IT Operations does.

### Impact in a nutshell

Impact solutions, at their core, involve two things: catching "events" and reacting to those events in some pre-programmed manner.

### Impact "events"

To Impact, an event is some change in your IT environment that can be captured electronically. Examples include:

- a new fault from a DB2 application appearing in Netcool/OMNIBus
- the discovery of a new server by a network discovery tool
- a new trouble ticket being opened

### Event sources

One of Impact's core features is the ability to capture events from a wide variety of applications and data sources. Impact is most commonly used to capture events in Netcool/OMNIBus, but Impact can capture events from the following sources:

- popular relational databases and the applications that use them
- Java Messaging Service (JMS) buses

- Web Services
- Email
- Instant Messaging
- Command line
- IBM Tivoli Network Manager IP Edition

### "Capturing" events

Impact "captures" an event by loading the event details into memory. The event details depend on the source of the event. In the case of Netcool/OMNIBus events, the event details are the alerts.status table's fields that make up the event.

The components within Impact that capture events are called Readers and Listeners. The key difference between Readers and Listeners is that Readers actively poll a data source for events (changes) while Listeners passively wait for events to be sent to them from the data source. An example Reader is the Netcool/OMNIBus Reader which polls OMNIBus for changes to the OMNIBus database. An example Listeners is the Java Messaging Service (JMS) Listener, which simply listens on a JMS topic or queue for new messages.

### Reacting to events

Impact reacts to captured events in its Policy Engine. The events are evaluated against filters and then directed to one or more Impact Policies which define what Impact does with the event. Impact Policies can direct Impact to do things like:

- correlate event data with data in external sources
- perform if-then analysis with the event data and data drawn from external sources
- enrich the original event with external data or with analysis results
- gateway data to external systems
- perform escalations and notifications
- attempt to resolve IT faults automatically

Impact Policies are defined by manually writing Impact Policy scripts (Policies) or using Impact Policy Wizards to generate Impact Policies.

### Summary

Impact captures events from a variety of sources using Impact Readers and Listeners. The Impact Policy Engine follows pre-programmed rules, called Impact Policies, as it reacts to the captured events. These Impact Policies perform analysis, interact with external systems (applications, hardware, services) and update the source from which the event was captured.

### Overview of an Impact project

This section will expand upon topics brought up in the **Impact in a Nutshell** section by stepping through a simple Impact project. Impact's components will be discussed in more detail. The project will automate part of an IT Operations work flow.

### Business value

Before creating Impact solutions, it's important to understand what business value you will be delivering.

In this example, we're going to automate part of an IT Operations work flow. Impact will reduce the mean time to repair (MTTR) for IT outages by performing the IT Operations work flow **for** and **faster** than IT Operations personnel.

### The work flow (Pre-Impact)

#### Business goals

The business goals behind the work flow are to:

- insure that outages are resolved by paging the correct on-call engineer
- insure that outages with the highest priority to the business are resolved first

#### **Pre-Impact work flow implementation**

In order to reach the business goals, the OMNibus web client is watched by entry-level support personnel. When a new outage is shown in OMNibus, the support person taking ownership of the outage looks in the IT Asset application to determine what departments are affected. The support person then checks the "Department SLAs" chart taped to their monitor to determine SLAs for the departments affected by the outage. Next, the support person uses the Enterprise Notification application to determine the engineer on-call and notifies the engineer with outage, asset, and SLA information. The support person will update OMNibus with the SLA information, name of the engineer notified, and the time of notification.

The on-call engineer will tackle the highest priority outages first, based on SLA information.

#### **Bringing in Impact**

The rest of the document will walk through the process of bringing Impact in to automate the work flow described above.

#### **Understand the work flow**

Before anything else, you need to understand the work flow you want to automate. You need to understand not only what it is that people are doing manually but what systems/applications the people interact with and what data are used to make decisions.

#### **Capture the events**

The manual work flow is triggered by a new event appearing on screen for IT Operations. OMNibus is the event source Impact should use as well.

Event capture, using Impact Readers and Listeners, was introduced in the **Impact in a nutshell** section of this document. Impact can capture events from the following sources:

- popular relational databases and the applications that use them
- Java Messaging Services (JMS)
- Web Services
- Email
- Instant messaging
- Command line
- IBM Tivoli Network Manager IP
- Policy Activator

#### **Capturing events from relational databases (RDBMS)**

The Impact Readers poll tables in relational databases for changes. A Reader will use an incrementing field to determine which records have been added to the table since the last poll. A Reader can also poll for updates to records using a time stamp field.

Impact Listeners can be used with some of the latest versions of relational databases. These databases are capable of sending a notification out when data in a table changes.

#### **Capturing events from a Java Messaging Service (JMS)**

An Impact JMS Listener is used with JMS. The Listener attaches to a JMS topic or queue and captures messages written to the topic or queue as events.

#### Capturing events via web services

Impact has a Web Services Listener which can be sent requests to run Impact Policies on data sets.

#### Capturing events via Email

Impact check a pop3 email box for mail using the Email Reader. This Reader is configured to check for mail every  $n$  seconds. The email *subject*, *body*, and *sender* all become part of the events that the Reader sends to the Policy Engine.

#### Capturing instant messages as events

Impact can connect to a Jabber IM server and receive instant messages as events. Jabber servers can be configured to gateway instant messages from AOL, Yahoo, MSM, and ICQ; thus, Impact can receive and send instance messages on all of these services. The contents of an incoming instant message become the event sent to the Impact Policy Engine.

#### Capturing events sent via the command line

Impact has a command line interface which can be used to send requests to run a policy on a data set. This interface requires command-line access to a host running an Impact server.

#### Capturing events from IBM Tivoli Network Manager IP (formally Netcool/Precision)

Impact has a Precision Listener which will receive asynchronous messages from Precision aka IBM Tivoli Network Manager IP

#### Capturing events using the Policy Activator

The Impact Policy Activator Services runs an Impact Policy events  $n$  seconds. The event captured could simply be the passing of  $n$  seconds or the activated Policy can query some source of data.

#### Event capture in this solution

When working with OMNIBus, a Reader is typically used. In this solution, the Reader will be configured to poll OMNIBus for new events and will push those events to the Policy Engine.

## Data access

The Impact Policies will need access to all of the same information the IT Operations personnel use when manually doing their part in the work flow. Impact has many options for reading from and writing to external systems in order to get information.

#### Data access options

- Querying relational databases
- Sending messages to JMS topics and queues
- Web services calls
- XML read in from a file or a URL
- SNMP GET and GETNEXT

- SSH, telnet, and 3270 command-response sessions
- Socket server
- email
- instant messages
- IBM Tivoli Network Manager IP queries via OQL

#### Querying relational databases

Impact has Data Source Adapters (DSA) for DB2, Oracle, Sybase, MySQL, Postgres SQL, MS SQL, Informix, and OMNibus. There is also an ODBC DSA and a Flat File DSA for reading delimited text files. These DSAs allow Impact Policies to read from and write to tables in these databases.

Note the Flat File DSA only supports reading *from* a delimited text file and not writing to the file.

#### Querying via JMS

Impact has a JMS Data Source Adapter which Impact Policies can use for sending and receiving messages on a JMS bus. Impact can use the JMS DSA to post queries on receive on response.

#### Querying via web services

Impact has a Web Services DSA which Impact Policies can use to make web services calls. A WSDL file is required.

#### Querying via XML

Impact has an XML DSA which Impact Policies can use to read in XML data from a URL or a file. A DTD or XSD is required.

#### Querying via SNMP

Impact has an SNMP DSA which Impact Policies can use to perform SNMP GET, GETNEXT, and SET.

#### Querying via SSH, telnet, and 3270 commands

Impact has a command-response module which can be used in a Policy to connect to a remote terminal (via SSH, telnet, or 3270) and issue commands. Command output is captured and can be used in the Impact Policy.

#### Querying via a socket server

Impact has a socket DSA which Impact Policies can use to retrieve data via a socket server. A socket server is a program that acts as a mediator between a third-party entity and the socket DSA. Impact Policies use the Socket DSA to send queries to the socket server. The socket server queries the third-party entity and returns the results to Impact.

#### Querying IBM Tivoli Network Manager IP (formally Netcool/Precision)

Impact has a Precision DSA which can be used to query ITNM IP for network data via ITNM's OQL interface. Impact can also directly query and update the relational database used by ITNM.

#### Accessing the asset application

The asset application in our example stores its data in a DB2 database. Impact will access the data using an Impact DB2 DSA. The person configuring Impact will configure a connection to the DB2 database and to the appropriate tables needed for the Impact Policy.

### Accessing the SLA data

The SLA data is currently "stored" on paper. For our example solution, the data will be moved into an Impact "internal" table. Impact is not an application for storing data but it does provide the ability to store small amounts of data for solutions like this one.

In addition to using Impact to store the SLA data, a custom GUI for administering the SLA data will be configured using Impact's Operator View technology. The Impact Operator View technology works well for building quick web applications or dashboards.

### Accessing the enterprise notification application

This particular notification application has a web services interface which Impact will use. The Impact Policy will determine, via a web services request, the engineer on call for the host having the outage. Impact will also send a notification to that engineer via a web services call to the notification application.

### React to the events

The next step is to react to incoming events. Events are routed to Policies by the Event Reader or Listener. Policies contain the business logic which defines how Impact will react to events. Impact Policies make use of Impact's data access capabilities to do things like:

- correlate event data with external data sources
- perform if-then analysis with the event data and data drawn from external sources
- enrich the original event with external data or analysis results
- gateway data to an external application
- perform notifications and escalations
- for fault events, attempt to resolve the problem

### The Impact Policy for the example solution

The goal behind our example solution Impact Policy is to notify engineers who will be dealing with the outage. The notification should include the highest SLA level affected by the outage. The following steps will be taken by the Impact Policy:

- determine the affected departments
- determine the SLAs for the affected departments
- determine the engineer on call
- notify the engineer
- update the original event

#### Determine the departments affected by the node being down

Our Impact Policy is started when a new event comes into OMNibus. The Policy starts out only knowing the data present in the event. The Impact Policy will need to correlate the node in the event with data in the Asset application in order to determine the departments affected by the outage.

#### Determine the SLAs with the affected departments

Once the affected departments are determine, the Impact Policy can correlate the affected departments with the SLA data in order to determine the highest-level SLA affected by the outage.

#### Determine the engineer on-call for the node

The Impact Policy will send a web services request to the Notification application to determine the engineer on call.

#### **Notify the engineer on call**

The Policy will then send a notification to the engineer on call. The notification will include the affected node and the highest-level SLA affected by the outage.

#### **Update the original event in OMNibus**

The last thing the Policy will do is update the original event with SLA information, the name of the engineer notified, and the time of notification.

### **Final steps**

Technically, the Impact solution is complete. The events are captured by the Reader. The Impact Policy is reading from and writing to all of the data applications it needs to. Engineers are being notified.

There are a few more things that can be done.

#### **Return on Investment Efficiency report**

The Impact ROI Efficiency report compares the time the Impact takes to solve a execute a Policy with the time it takes an IT Operations person to take the same steps. The saved time is based on how many times the Impact Policy was executed. Configuring an ROI report will help you show the value you are delivering to the business with Impact.

#### **Performance reports**

Most Impact Policies make heavy use of data in external applications. The stability and responsiveness of these external applications impact the performance of Impact Policies. When an external application is unavailable, Impact sends a self-monitoring event into OMNibus.

Impact also tracks the performance of Policies and Data Sources. You can use these reports to identify bottlenecks. For example, let's say that the Policy defined in our example solution takes five seconds to run and four of those five seconds are spent waiting for a response from the Asset application. The host running the Asset application is probably overloaded and needs to be updated.

#### **Improve the solution**

The simple solution defined in this example could be improved upon. What if the on-call engineer doesn't respond to his or her notification? Could we eliminate the needs for notification all together be resolving the problem automatically? You can always find more that can be done with Impact.

### **Summary**

For the example Impact solution, the following tasks were undertaken:

1. The first step was to understand the business value Impact was adding.
2. The second step was to understand the existing work flow, how it could be automated, and the data required for Impact to make decisions.
3. The third step was to capture the events to start the work flow. We captured events from OMNibus using an Event Reader.
4. The fourth step was to make the necessary data connections for correlation, decision making, and event enrichment. Impact was connected to the Asset application, the SLA application, and the Notification application. The SLA application was developed for the project using Impact Operator View.
5. The fifth step was to write the Impact Policy which guided Impact's reaction to the incoming event. The Policy determined

affected departments and their SLAs. The Policy also notified the engineer on call and updated OMNibus so that IT Operations personnel could see that an engineer had been notified.

- The sixth step was to configure reporting. The ROI report is used to calculate the value the Impact solution was delivering. The Performance report is used to insure that the Impact solution is operating at peak efficiency.

### **First Improvement to the Solution: Escalations**

The previously defined solution doesn't do anything if the on-call engineer fails to respond to the notification. I'll briefly cover what could be added on to the existing solution to escalate in situations where the on-call engineer doesn't respond.

#### **Understanding the work flow**

The work flow hasn't really changed from before. Some business logic will be added to handle escalations in the event that the on-call engineer fails to respond in a reasonable amount of time.

#### **Capturing the events**

A new event capture is being added to the solution-- the passage of time. Ten minutes after the initial notification, Impact will check to see if the event has been resolved or at least updated by the on-call engineer.

#### **Data access**

This improved solution will be looking into the Notification application for escalation contact information

#### **Reacting to the events**

The previous Impact Policy will be updated with the following behaviors:

- after sending the initial notification and updating OMNibus, sleep for 10 minutes
- wake up
- retrieve the latest version of the event from OMNibus
- if the event has not been resolved or updated by the on-call engineer then...
- ...retrieve the escalation contact from the Notification application using web services
- ...send a notification to the escalation contact via a web services call to the Notification application
- ...update OMNibus with the new notification information

#### **Final steps**

The ROI efficiency report should be updated to reflect the additional steps being taken by Impact.

### **Second improvement to the solution: auto-correction**

#### **Understand the work flow**

In the manual work flow, the on-call engineer was responsible for fixing every outage. The goal with this next improvement is to resolve outages automatically.

#### **Capture the events**

Event capture doesn't change.

#### **Data access**

A new data source will be added. This new data source will be a relational database that contains auto-resolution information.

The auto-resolution information will tell Impact which auto-resolution routine to run based on the type of outage. An example auto-resolution routine would be to have Impact SSH into a host and restart a process.

### Reacting to events

The following steps will be added to the Policy before the initial notification takes place:

- correlate the event with the auto-resolution information to determine the auto-resolution routine to perform and how long to wait for the auto-resolution to solve the problem
- carry out the auto-resolution
- wait the x minutes specified in the auto-resolution information
- check OMNibus to see if the outage has been resolved
- update the event accordingly and perform notifications if the auto-resolution failed

### Final steps

The ROI Efficiency report should be updated to reflect the additional steps being taken by Impact. A separate report should be put together that shows the number of outages that were automatically resolved. This data should be compared to the average amount of manual time spent to resolve issues in order to get an idea of the ROI.

The performance of the auto-resolution steps should be monitored to watch for bottlenecks.

\* Any driver jar located externally, must be added to \$IMPACT\_HOME/dsalib, the Impact server must then be restarted.

### DB2 DSA

The DB2 DSA supports versions 9.7, 9.8, 10.x, 11.1 and 11.2 of the DB2 database. This DSA uses version 9.7 of the JDBC driver that is provided automatically in Netcool/Impact.

### Derby DSA

The Derby DSA uses Apache Derby JDBC driver version 10.8.3.3. For more information about Apache Derby, see this URL, <http://db.apache.org/derby/>.

### Flat File DSA

You use the Flat File DSA to read information in a character-delimited text file.

### Generic SQL DSA

To use the Generic SQL DSA, you must specify its JDBC driver in the Generic SQL data source configuration window.

### HSQLDB DSA

You use the HSQL DSA to retrieve, add, modify and delete information stored in a HSQL database. This DSA supports version 2.0 of the HSQL database server.

### Informix® DSA

The DSA supports versions 11.x 12.x. An Informix DSA uses JDBC driver 3.50.JC3 that is provided automatically in Netcool/Impact.

### MySQL DSA

This DSA supports version 5.x and 8 of MySQL. To use this data source adapter obtain MySQL Connector/J 5.1.48 JDBC driver(mysql-connector-java-5.1.48.jar), from this URL:

<https://dev.mysql.com/downloads/connector/j/5.1.html>

### MS-SQL Server DSA

This DSA supports MS-SQL Server 2008, 2012, 2014 & 2017

To use this data source adapter obtain the Microsoft SQL Server version 6.2, a Type 4 JDBC Driver, from this URL:

<https://docs.microsoft.com/en-us/sql/connect/jdbc/download-microsoft-jdbc-driver-for-sql-server?view=sql-server-2017>

**ObjectServer DSA**

This DSA supports versions 7.3.x, 7.4 and 8.1.x of the ObjectServer.

**ODBC DSA**

Use the ODBC DSA to access information in an ODBC database.

**Oracle DSA**

This DSA supports versions 11.x, 12.x, 18.x and 19.x of the Oracle database server.

The Oracle DSA uses Oracle JDBC driver version 11.2.0.1.0 that is provided automatically in Netcool/Impact.

**PostgreSQL DSA**

This DSA supports versions 8.x , 9.x, 10.x and 11.5 of the PostgreSQL database.

The PostgreSQL DSA uses JDBC driver version 9.2-1002 JDBC4 that is provided automatically in Netcool/Impact.

**Sybase DSA**

This DSA supports versions 12.x, 15.x and 16.2 of the SAP ASE/Sybase Database Server.

This DSA uses jconn3-6.0.5.jar that is provided automatically in Netcool/Impact.

The following issue has been reported recently from Impact customers on FP12 and FP13 :

In cluster environment some customer see a failure of replication of artefacts from PRIMARY cluster member to SECONDARY cluster member. Also, in cluster and non-cluster environment some customers see error messages in Impact sever log files, without any functional failure.

**SYMPTOMS**

The symptoms are intermittent, and customers may see:

- 1 Slowness when processing events.
- 2 Events are being processed solely on PRIMARY cluster member.
- 3 Artifacts created on PRIMARY cluster are not replicated to SECONDARY cluster member. E.g. a policy or a datasource created on PRIMARY server doesn't appears on SECONDARY cluster member , in case of failover.
- 4 Exceptions and ERRORS in Impact server log files. Here are two examples

*05 Jun 2018 08:37:44,504 ERROR [PublisherProxy] Unable to register a proxy instance for 'ObjectHolderORBPublisher-43807' in the Executor; this is most likely attributed to the fact that the Executor may be in the midst of a shutdown.*

**java.util.concurrent.RejectedExecutionException: Task**

*com.micromuse.common.util.concurrent.TrackingExecutor\$1@de1dae3b rejected from*

*java.util.concurrent.ThreadPoolExecutor@627db6ae[Shutting down, pool size = 12, active threads = 12, queued tasks = 0, completed tasks = 116]*

*at java.util.concurrent.ThreadPoolExecutor\$AbortPolicy.rejectedExecution(ThreadPoolExecutor.java:2081)*

*at java.util.concurrent.ThreadPoolExecutor.reject(ThreadPoolExecutor.java:840)*

*at java.util.concurrent.ThreadPoolExecutor.execute(ThreadPoolExecutor.java:1394)*

*at com.micromuse.common.util.concurrent.TrackingExecutor.execute(TrackingExecutor.java:101)*

*at com.micromuse.common.util.concurrent.ThreadManager.execute(ThreadManager.java:103)*

*at com.micromuse.response.common.PublisherProxy.invoke(PublisherProxy.java:95)*

*at com.sun.proxy.\$Proxy61.notifySubscribers(Unknown Source)*

*at com.micromuse.response.broker.cluster.ClusterMember.notifyConfigUpdates(ClusterMember.java:981)*

*at com.micromuse.response.server.Facade.applyUpdate(Facade.java:353)*

*at com.micromuse.response.broker.cluster.ClusterMember\$3.update(ClusterMember.java:2254)*

*at com.micromuse.common.util.BasicPublisher.notifySubscribersExcept(BasicPublisher.java:75)*

*at com.micromuse.common.util.BasicPublisher.notifySubscribers(BasicPublisher.java:104)*

*at com.micromuse.response.server.Service.notifyServiceStateSubscribers(Service.java:486)*

*at com.micromuse.response.service.AbstractEventReader.newServiceStateAvailable(AbstractEventReader.java:772)*

*at com.micromuse.response.broker.EventBroker.persistToFile(EventBroker.java:391)*

```
at com.micromuse.response.service.AbstractEventReader.checkPoint(AbstractEventReader.java:905)
at
com.micromuse.response.broker.cluster.RoundRobinEventQueueManager.checkPoint(RoundRobinEventQueueManager.java:594)
at sun.reflect.GeneratedMethodAccessor129.invoke(Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at sun.rmi.server.UnicastServerRef.dispatch(UnicastServerRef.java:378)
at sun.rmi.transport.Transport$2.run(Transport.java:215)
at sun.rmi.transport.Transport$2.run(Transport.java:212)
at java.security.AccessController.doPrivileged(AccessController.java:492)
at sun.rmi.transport.Transport.serviceCall(Transport.java:211)
at sun.rmi.transport.tcp.TCPTransport.handleMessages(TCPTransport.java:580)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.run0(TCPTransport.java:841)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.access$400(TCPTransport.java:632)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler$1.run(TCPTransport.java:697)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler$1.run(TCPTransport.java:694)
at java.security.AccessController.doPrivileged(AccessController.java:426)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.run(TCPTransport.java:694)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1164)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:634)
at java.lang.Thread.run(Thread.java:798)
```

And

03 Jun 2018 19:31:34,666 ERROR **[ORBPublisherImpl] Unexpected exception in subscriber; removing...**

java.lang.ThreadDeath

```
at java.lang.Thread.stop(Thread.java:988)
at com.micromuse.response.server.Rooster.stopRunning(Rooster.java:239)
at com.micromuse.response.broker.cluster.ClusterMember.stopRunning(ClusterMember.java:1375)
at com.micromuse.response.broker.cluster.ClusterMember.shutdownClusterMember(ClusterMember.java:791)
at com.micromuse.response.server.Server.stop(Server.java:433)
at
com.micromuse.response.server.management.ManagedImpactServerSupport.stop(ManagedImpactServerSupport.java:237)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:95)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at com.micromuse.response.server.management.ImpactServerLibertyBean.invoke(ImpactServerLibertyBean.java:305)
at com.sun.jmx.interceptor.DefaultMBeanServerInterceptor.invoke(DefaultMBeanServerInterceptor.java:832)
at com.sun.jmx.mbeanserver.JmxMBeanServer.invoke(JmxMBeanServer.java:814)
at com.ibm.ws.kernel.boot.jmx.service.MBeanServerForwarderDelegate.invoke(MBeanServerForwarderDelegate.java:196)
at com.ibm.ws.jmx.internal.DelayedMBeanActivator.invoke(DelayedMBeanActivator.java:547)
at com.ibm.ws.kernel.boot.jmx.internal.PlatformMBeanServer.invoke(PlatformMBeanServer.java:372)
at com.micromuse.response.server.ImpactStartupBean.stop(ImpactStartupBean.java:275)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:95)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at com.ibm.ejs.container.interceptors.InterceptorProxy.invokeInterceptor(InterceptorProxy.java:205)
at com.ibm.ejs.container.interceptors.InvocationContextImpl.proceed(InvocationContextImpl.java:642)
at com.ibm.ejs.container.interceptors.InvocationContextImpl.doLifecycle(InvocationContextImpl.java:335)
at com.ibm.ejs.container.SingletonBeanO.callTransactionalLifecycleInterceptors(SingletonBeanO.java:236)
at com.ibm.ejs.container.SingletonBeanO.destroy(SingletonBeanO.java:889)
```

```

at com.ibm.ejs.container.EJSHome.destroy(EJSHome.java:658)
at com.ibm.ejs.csi.EJBApplicationMetaData.beginStopping(EJBApplicationMetaData.java:1171)
at com.ibm.ejs.csi.EJBApplicationMetaData.stopping(EJBApplicationMetaData.java:1229)
at com.ibm.ws.ejbcontainer.osgi.internal.EJBRuntimeImpl.applicationStopping(EJBRuntimeImpl.java:1626)
at com.ibm.ws.container.service.state.internal.ApplicationStateManager.fireStopping(ApplicationStateManager.java:58)
at
com.ibm.ws.container.service.state.internal.StateChangeServiceImpl.fireApplicationStopping(StateChangeServiceImpl.java:60)
at
com.ibm.ws.app.manager.module.internal.SimpleDeployedAppInfoBase.uninstallApp(SimpleDeployedAppInfoBase.java:472)
at com.ibm.ws.app.manager.ear.internal.EARApplicationHandlerImpl.uninstall(EARApplicationHandlerImpl.java:97)
at com.ibm.ws.app.manager.internal.statemachine.StopAction.execute(StopAction.java:83)
at
com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.enterState(ApplicationStateMachineImpl.java:1283)
at
com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.performAction(ApplicationStateMachineImpl.java:1126)
at
com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.run(ApplicationStateMachineImpl.java:881)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1164)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:634)
at java.lang.Thread.run(Thread.java:798)

```

## CAUSE

We have identified an issue with an Impact build-in function `ActivateAndReturn`. There, the Thread Manager while managing the threads executing the function code, prematurely shuts itself down. This shuts down other threads carrying out different tasks in Impact. And this precipitates the symptoms described above.

## FIX

We provide code fix with `nci.jar` replacement for FP12 and FP13 deployed products. Also, the same fix will be delivered in next FP release.

The fix is available to download until 21 September 2018 from ( date will be extended if needed ) :

```

ftp ftp.ecurep.ibm.com
user anonymous
password <email address>
cd /fromibm/dwG6SKDz5lZxm3E54nAc7WnZO4u3VCOF11jHN6IUq74
bin
get nci_FP12_IJ07083.jar

```

```

ftp ftp.ecurep.ibm.com
user anonymous
password <email address>
cd /fromibm/7urFfyL4VzueUrSK4sg0W2mmL8anTDA6Efl8DqybK8
bin
get nci_FP13_IJ07083.jar

```

Steps to apply the `nci_FP13_IJ07083.jar` to FP13 environment

1. stop Impact server

2. make a backup copy of current `nci.jar` file

```

cp $IMPACT_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar to $IMPACT_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar.ORI

```

3. copy `nci_FP13_IJ07083.jar` to `$IMPACT_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar`

## Netcool Impact 7.1 Scenarios

### **OSLC UI Preview in Jazz for Service Management with Netcool/Impact**

**Summary:** This paper is a step-by-step solution guide to performing a UI (hover) preview within the Jazz for Service Management (JazzSM) Dashboard component by using Netcool/Impact. Netcool/Impact 6.1.1 and higher provide out of the box solution capabilities with the JazzSM Registry Services by acting as an OSLC (Open Services for Lifecycle Collaboration) facade. Using Netcool/Impact, you can create a custom OSLC service provider and register resources into the registry services, and provide a Netcool/Impact operator view as content for a resource when hovering your mouse on top of a value in a widget inside a Jazz for Service Management dashboard.

[Read an Article](#)

### **Load Balancing and High Availability UI Data Provider Connections to Netcool Impact**

**Summary:** This paper is a step-by-step solution guide to enable load balancing and high availability connections for the Jazz for Service Management (JazzSM) Dashboard component to the Netcool/Impact data provider cluster. Netcool/Impact 6.1.1 and higher provide out of the box solution capabilities by exposing Netcool/Impact data types and policy variables (user output parameters) through its user interface (UI) data provider to visualize its data through dashboard widgets. By using an IBM HTTP server to round robin HTTP(S) connections, we can improve performance and guarantee availability, scaling horizontally by increasing Netcool/Impact GUI servers and backend servers.

[Read an Article](#)

## Scenarios and examples for Impact

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### **Using Netcool/Impact WebService DSA to display data from WebService Server in dashboard**

**Summary:** How to use the Netcool/Impact WebService DSA to create custom dashboard to visualize data from WebService server. Impact data type and WSInvokeDL policy function is used to retrieve the data from the WebService server to display different dashboard widgets in JazzSM. The WebService call returns weather information for multiple cities selected from a database table.

[Watch a Demo](#)

[Download Demo](#)

---

### **Using Netcool/Impact to get and parse XML data using XML DSA and GetByXPath**

**Summary:** You can use IBM Tivoli Netcool/Impact to get and parse XML data using XML DSA and GetByXPath, and for example pass events to Tivoli Business Service Manager (TBSM). This document shows you the steps of using XML DSA in Impact, it also provides an example of how to get XML data from ITCAM for Transactions using GetByXPath policy function.

[Read an Article](#)

---

### **Using Impact as an OSLC Facade**

**Summary:** The Tivoli Netcool/Impact product can be used as an OSLC facade for third party products that don't have their own OSLC service provider capability. In this recorded demo, we take you through using Impact to provide hover preview capability to TBSM as an OSLC consumer for the Netcool/OMNibus product, enabling the ITM event information to be displayed inside a new hover preview window inside TBSM.

[Watch a Demo](#)

[Download Demo](#)

[Download package](#) (Support package from demo)

[Additional Information: Using the New Impact OSLC Functionality Demo](#)

---

## Using Netcool/Impact Flat File DSA to display data from files in dashboard

**Summary:** How to use the Netcool/Impact Flat File DSA to create custom dashboard to visualize data from comma separated value file. Impact data type and policy function, GetByFilter, are used to retrieve the data from the file to display different dashboard widgets in JazzSM.

[Watch a Demo](#)

[Download Demo](#)

---

## Designing a Web Application User Session Tracking Dashboard with Netcool/Impact, ITM and ITCAM

**Summary:** By using the monitoring data provided by IBM Tivoli Monitoring (ITM) and ITCAM for Transactions monitoring agents, this video shows how to use IBM Tivoli Netcool/Impact to build a custom dashboard that can visualize the health of any user web sessions, from the end-to-end transaction flow for each session down to the individual health and response time of each transaction.

[Watch a Demo](#)

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---

## Using Netcool/Impact to integrate with Netcool/OMNIBus Active Event List and Charting Portlets in the Tivoli Integrated Portal

**Summary:** You can use IBM Tivoli Netcool/Impact to expose data types and policy user output parameters through the UI Data Provider to populate the Tivoli Integrated Portal (TIP) charting portlets. Through the use of Impact polices, you can provide additional filtering logic to allow the data populated in the portlets to be in context of other portlets, like the Active Event List (AEL). This scenario visualizes the archived event data in real-time.

[Read an Article](#)

[Watch a Demo](#)

[Download Demo](#)

---

## Using Netcool/Impact and IBM Tivoli Monitoring to build a custom self service dashboard

**Summary:** This scenario shows how to create a self service dashboard in the IBM Dashboard Application Services Hub component of Jazz™ for Service Management. The custom dashboard that you create uses Tivoli Netcool/Impact to connect to and retrieve data from an IBM Tivoli Monitoring dashboard data provider. You can also use Tivoli Netcool/Impact to combine metric data from multiple managed systems and filter this data in context, based on events from publishing widgets such as a list or table.

[Read an Article](#)

---

### **Configuring Netcool/Impact to query data, manage events and send commands to IBM Tivoli Monitoring (ITM)**

**Summary:** How to configure Netcool/Impact to query data, manage events and send commands to IBM Tivoli Monitoring (ITM) 6.1 and higher. Queries, events and commands are sent from Tivoli Netcool/Impact into the IBM Tivoli Monitoring Universal Message Console through web services. Download the ITMLibraryFunctions.zip file and complete the steps documented in the article.

[Read an Article](#)

[Download package](#) (contains ITMLibraryFunctions.zip file function examples in .ipl and .js and the article)

---

### **Helper functionality to identify Netcool/Impact policy syntax for retrieving web service response data**

**Summary:** How to use the Netcool/Impact policies Web service wizard to create a policy to connect to and retrieve data from a particular web service. How to install the Web Service Details Dashboard package into your Tivoli Integrated Portal server and use it to query the information inside the associated web service's JAR file. The dashboard package contains Impact policies that populate the Tivoli Integrated Portal table widgets contained within the dashboard.

[Read an Article](#)

[Download package](#) (contains WebServiceDetails.zip and the article)

---

## **Netcool Impact 7.1 Scenarios**

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### **Configuring Netcool/Impact EventCorrelation to resolve an OMNibus Events flood**

**Summary:** Learn how to use the Netcool/Impact EventCorrelationUsingXinYExample.ipl policy and the OMNibus ObjectServer event reader service to perform event correlation to solve an events flood.

[Read an Article](#)

[Download package](#) (contains the EventCorrelationUsingXinYExample.ipl policy and the article)

---

### **Load Balancing and High Availability UI Data Provider Connections to Netcool Impact**

**Summary:** This paper is a step-by-step solution guide to enable load balancing and high availability connections for the Jazz for Service Management (JazzSM) Dashboard component to the Netcool/Impact data provider cluster. Netcool/Impact 6.1.1 and higher provide out of the box

solution capabilities by exposing Netcool/Impact data types and policy variables (user output parameters) through its user interface (UI) data provider to visualize its data through dashboard widgets. By using an IBM HTTP server to round robin HTTP(S) connections, we can improve performance and guarantee availability, scaling horizontally by increasing Netcool/Impact GUI servers and backend servers.

[Read an Article](#)

# How-To for Impact

## Accessibility Issues

Note: All Issues mentioned below are applicable to **Impact 7.1.0.4** only.

### Screen reader reads out incorrect count for table rows

#### Symptom

If you perform the following steps:

1. In the Services (e.g. OMNIBusEventReader) or Data Model (e.g. FlatFile Data Type) tab, create or edit an SQL based entry.
2. Start the screen reader.
3. Tab into the SQL schema table.

You will see that the first row is called out as Row 3 and thereafter the rows are called 4, 5, so forth.

#### Cause

This is a known issue with the JAWS screen reader and a limitation of the WAI-ARIA 1.0 implementation.

#### Resolution/Workaround

This issue only changes which number the table row begins at and does not affect the table functionality with a screen reader.

### Cannot navigate a toolbar with the arrow keys after activating a button.

#### Symptom

After activating a toolbar button, the left and right arrow keys will no longer allow you navigate between buttons in the toolbar.

#### Cause

This is a known issue with the JAWS screen reader. The Space key will activate the selected toolbar button and will simultaneously exit forms mode.

#### Resolution/Workaround

If the screen reader exits forms mode, you can use the **B** key and **Shift + B** keys to continue navigating the toolbar.

### When switching from the Data Source and Data Type lists in the Project Editor, the screen reader will repeat the last item from the Data Source list.

#### Symptom

In the project editor, if you switch from the Data Sources list to the Data Types list, the JAWS screen reader will call out the last entry in the Data Source list before reading out the Data Type list.

#### Cause

This is a known issue with the JAWS screen reader.

#### Resolution/Workaround

This has no functional impact on the project editor. The repeated data source can be ignored.

### When switching between the Policies list and Operator Views list, the screen reader will read out references to graphics

#### Symptom

In the project editor, if you switch from the Policies list to the Operator Views list, the JAWS screen reader may read out entries such as "Graphic one hundred, graphic three hundred ..."

#### Cause

This is a known issue with the JAWS screen reader.

#### Resolution/Workaround

This has no functional impact on the project editor. The references to graphics can be ignored.

### Report table columns no longer visible when a screen reader is running

#### Symptom

While a screen reader is running, if you select a table column from a report table and hit space, table columns may disappear from the screen.

#### Cause

This is a known issue with the JAWS screen reader.

#### Resolution/Workaround

This has no functional impact on the report table. The screen reader can continue to interact with the grid and hidden columns as normal but you can restore the columns by re-running the report.

### The control toolbar for report tables disappears when a screen reader is running.

#### Symptom

Double-clicking on a row (or hitting Enter twice) in a Report table while the JAWS screen reader is running will shift or misalign the table toolbar.

#### Cause

This is a known issue with the JAWS screen reader.

#### Resolution/Workaround

This has no functional impact on the report table. The screen reader can continue to interact and operate the toolbar and grid as normal but you can restore the toolbar by setting focus on the toolbar.

## Knowledge Center Tips

IBM Knowledge Center is the new location for all technical publications and replaces the Information Centers. From Knowledge Center you can access all product documentation from one location.

### Searching for information

When you enter search terms into the search field, IBM Knowledge Center returns a list of results that contain all the terms you used. Each search result shows the related product and product version. Use the following options to refine or filter your searches.

- Search using operators in the search field

“ “ Use quotation marks around search term to search for exact words (“policy editor”).

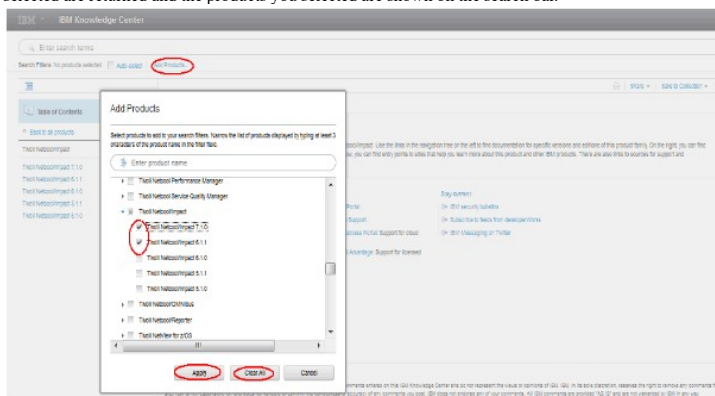
\* Use an asterisk in a search term for any missing words in a string (Event \* Correlation).

**OR** Use OR to search for topics that have one of two or more terms (ldap dsa OR jms dsa).

- Use a minus or hyphen sign before a word to exclude results that include that word (business -process management).

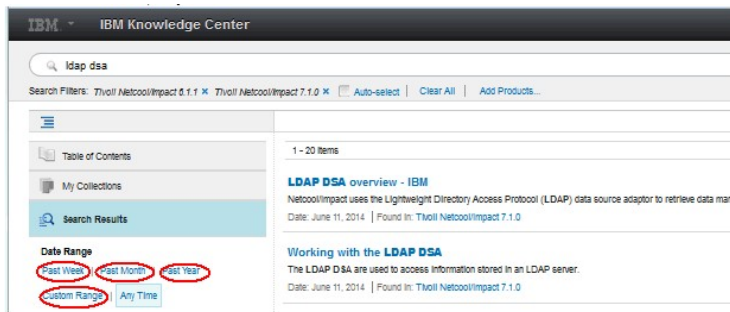
- Search by product(s)

Under the search field, click **Add Products**. Select **Clear All**, then click one or more products. Click **Apply** to apply your search scope. Only results from the version, product, or products that you selected are returned and the products you selected are shown on the search bar.



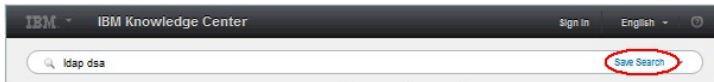
- Search by date range

Define your own range of dates to see only topics added or changed in the last week, month, or year.



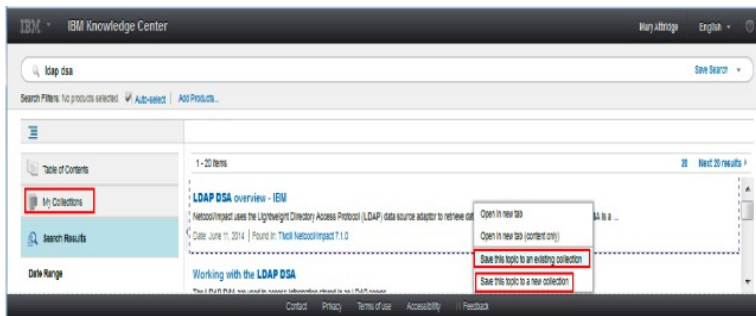
- Save your searches

You can save search term by clicking *Save Search*.



- Creating bespoke collections of topics

A collection is a grouping of topics selected by you. Save individual topics, groups of topics, into a bespoke collection by right clicking on the topic and select either *Save this topic to an existing collection* or *Save this topic to a new collection*. Also within *My Collections*, the content of a collection can be customized further and output to PDF.

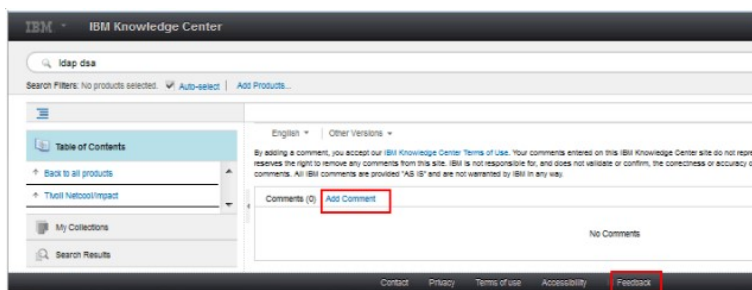


- Sharing topics on LinkedIn, Twitter or email

From within any topic in KC, click *Share*.

- Submitting comments and feedback on topics

You can submit private feedback or public comments on topics by using the *Feedback* and *Comments* links displayed towards the bottom of every topic.



To see more help information about Knowledge Center go to

<http://www-01.ibm.com/support/knowledgecenter/>

To get information about Netcool/Impact Knowledge Center to

<http://www-01.ibm.com/support/knowledgecenter/SSSHYH/welcome>

## Policy Language Code Library

### Arrays

#### sorting

```
function sortArray(IPLArray) {
  JavaCall("java.util.Arrays", null, "sort", { IPLArray });
  Log("sorted array: " + IPLArray);
  // Note: someone test this please I adapted some existing code and just posted it
}
```

Arrays in Impact are sparsely documented. The documentation mentions that arrays can contain elements of any datatype. What it doesn't mention is things about ways of initialization and handling (setting and adding values) and multidimensional arrays. Therefore I decided to collect some information you could be interested in.

#### Set me up

Simple initialize:

```
myArray = {};
```

Advanced initialize:

```
myArray = { "foo","bar","baz" };
```

This doesn't work:

```
myArray = { "foo",,"baz" };
```

This will work:

```
myArray1 = { "foo","","baz" };
myArray2 = { "foo",NULL,"baz" };
```

#### On Assignment

Though how about adding element to a freshly initialized array?

This will fail:

```
myArray = {};
myArray[5] = "foo";
```

Why? Because the element does not exist (yet). This means if you would like to set field N, eg 5 it has to be present.

Example:

```
myArray = { NULL,NULL,NULL,NULL,NULL,NULL };
myArray[5] = "foo";
Log("OUT: "+myArray[5]);
```

OUT: foo

#### Room for improvement

So if you are uncertain about the size of your array you should maybe establish some function to add elements until the array has at least this size:

```
Function arraySet(array,index,value) {
  arraySize = Length(array)-1;
  if (arraySize<index) {
    Counter = index-arraySize;
    While (Counter > 0) {
      Counter = Counter - 1;
      array = array + { NULL };
    }
  }
  array[index]=value;
}

myArray = {};
arraySet(myArray,5,"foo");
arraySet(myArray,3,"bar");
log("OUT: "+myArray);
```

OUT: [NULL, NULL, NULL, bar, NULL, foo]

What you can't do is removing fields. You can set them to NULL or "" though.

#### Dynamic Array of Hashes (Contexts) works in 5.1.1 FP1

I'm not positive when this feature was added, however this is working in 5.1.1 FP1:

```
AoH = {};
I = 3;
While ( I > 0) {
  H = NewObject();
  H.Color = "FF" + I;
  H.Size = I + "p";
  AoH = AoH + H;
  I = I - 1;
}
log(3, AoH);
```

OUT: {"Created by parser"=(Size=3p, Color=FF3), "Created by parser"=(Size=2p, Color=FF2), "Created by parser"=(Size=1p, Color=FF1)}

According to this, the array indices do NOT have to exist prior to the defining the data as long as you are simply "pushing" the data onto the array in order and do not care about assignment to particular indices.

Example:

```
myArray = {};
myArray = myArray + 'foo';
myArray = myArray + 'bar';
log(3, myArray);
```

OUT: {foo, bar}

### The field 101

Now how about multi dimensional Arrays? Can Impact do that? "Yes we can!" (Shure you heard that already somewhere).

Here is a three dimensional array with two rows, two columns and two fields in depth (a 2\*2\*2 cube):

```
myArray3D = {
  { {"Field 000","Field 001"}, {"Field 010","Field 011"} },
  { {"Field 100","Field 101"}, {"Field 110","Field 111"} }
};

log("OUT: "+myArray3D[1][0][1]);
```

OUT: Field 101

As you can see you just add additional brackets to address the fields.

### Dimensioning an Array or multi-dimensional Array

This ArrayCreate allows you to dimension an "empty" array in advance. So you can fill it in your policy later on. It uses the "value" to preset the content of all Array elements to the count of "index"

e.g. **value = null;** // This will set an empty element for each array index  
**value = {};** // This will set an empty array inside the element for each array index (Array X).

you can off course predimension the value with an dimensioned array (if you know the size of Array Y).

```
Function arrayCreate(array,index,value) {
  // uses value var - to create a dimensioned array
  // e.g. value = {} - to create a multidim array

  arraySize = Length(array)-1;
  if (arraySize < index) {
    Counter = index-arraySize;
    While (Counter > 0) {
      Counter = Counter - 1;
      array = array + { value };
    }
  }
  array[index]=value;
}

MyArrayX = {};
MyArrayY = {};
XSize=5;
ArrayCreate(ArrayX , XSize , ArrayY);
Log("OUT: "+MyArrayX);
```

OUT: {}, {}, {}, {}, {}, {}

So now you can fill it using **MyArray[0][0]='BLAH'** or even **MyArray[0] = MyArray[0] + 'BLAH'** (if you haven't previously dimensioned the MyArrayY).

## Command-Response code

### Create a SSH session

```
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*
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function createSSHSession(sshInfo, sshSession){
  //establish session
  sshSession=CommandResponse(sshInfo.hostname, sshInfo.username, sshInfo.UserCredentials, sshInfo.Options, sshInfo.sshPort, 60, 120);

  /* EXAMPLE sshInfo
  Just using username/password
  sshInfo=newobject();
  sshInfo.hostname="spiderman";
  sshInfo.username="netcool";
  sshInfo.sshPort=22;
  sshInfo.expectList=["[aabsmenbl:netcool@spiderman ~]$ "];

  sshInfo.UserCredentials=newobject();
  sshInfo.UserCredentials.Password=decrypt("7E6C7364EFD7CD69"); //run nci_crypt on password so as not to have it here in plain text

  sshInfo.Options=newobject();
  sshInfo.Options.Service="ssh";
  sshInfo.Options.AutoInitiate=TRUE;
  sshInfo.Options.CmdTerminator="\n";
  sshInfo.Options.InitialPrompt="[aabsmenbl:netcool@spiderman ~]$ ";
  */
}
```

### End a SSH session

```

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*
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function endSSHSession(sshSession){
    sshSession.Disconnect=true;
}

```

## Create a text file using unix echo

### remove characters that unix echo will puke over

```

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function cleanTextForUnixEcho(text){
    //Remarks gunk that makes Unix echo puke
    //If you run into problems start simple
    //THIS ONE \ IS A PROBLEM text=Replace(text, "\\\\", "A", 10000000);
    text=Replace(text, "<", "\\\\", 10000000);
    text=Replace(text, "|", "\\\\", 10000000);
    text=Replace(text, '>', "\\\\", 10000000);
    text=Replace(text, '&', "\\\\", 10000000);
    text=Replace(text, '"', "\\\\", 10000000);
    text=Replace(text, "`", "\\\\", 10000000);
    text=Replace(text, "~", "\\\\", 10000000);
    text=Replace(text, "#", "\\\\", 10000000);
    text=Replace(text, ";", "\\\\", 10000000);
    text=Replace(text, "\\", "\\\\", 10000000);
    text=Replace(text, "(", "\\\\", 10000000);
    text=Replace(text, "\$ ", "\\\\", 10000000);
    //NO DO NOT USE | text=Replace(text, "|", "\\\\", 10000000);
    text=Replace(text, "\*", "\\\\", 10000000);

    //log("\n" + text + "\n");
}

```

### create the text file

```

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*
*****/ End Copyright *****/

function createRemoteFile(fullFileName, text, sshExpectList, sshSession, cmdOutput){
    sshSession.SendCommand = "echo " + text + " > " + fullFileName;
    sshSession.ExpectList = sshExpectList;
    cmdOutput="remote file creation shouldn't provide output " + sshSession.ResponseReceived;
}

```

## Working with Contexts and Data Items

### Referencing context or data item values using array-like syntax

The manuals say to use dot notation when referencing context or data item values:

```
myContext.valueA = "Tom";
```

You can also reference values in a context or data item using an array-like syntax:

```
myContext[valueB] = "Daniel";
```

This is especially handy when you're working with data items and you don't necessarily know the fields in the data item.

```

//get the row(s) in an array
rows = getsomemethodoranother(myDataType);

//get the first item in the rows array into a variable
row=rows[0];

//use keys to pull out the fields for the first row
fieldsArray = keys(row);

//so now you've got a context containing a bunch of field=value pairs
//and you've got an array which contains the fields
//time to do some sort of loop

//counter for while loop
count = 0;

//while loop
while (count < length(fieldsArray) {
    //looping through all of the field names
    theField = fieldsArray[count];
}

```

```
//this is the interesting bit-- the row[theField]
log("the value of " + theField + " is " + row[theField]);
count = count + 1;
}
```

Note this also works for the Event Container.

## Working with Data Types

### Getting Data Type Field Names

```
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*
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function getObjFields(IPLObject, fieldList){
fieldList=keys(IPLObject);
JavaCall("java.util.Arrays", null, "sort", { fieldList });
//log("Fields of the object are: " + fieldList);
}
```

## IPL code for Working with Netcool OMNibus

### NVP Functions

```
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function util_splitAV(AVString, avContext){
  x = split(AVString, ";");
  //log(x);
  count=0;
  y={};
  z={};

  while (count < length(x)){

    pair=x[count];
    //log(pair);

    splitPair=split(pair, "=");

    y=y + splitPair[0];
    //log(y);

    z=z+splitPair[1];
    //log(z);

    count=count+1;

  }

  avContext=newobject();
  avContext.attributes=y;
  avContext.values=z;
}

function util_stripEnds(returnValue) {
  x = rextract(returnValue, "(.*)");
  returnValue = x;
}

function util_removeDoubles(returnValue) {
  returnValue = replace (returnValue, '"', '');
}

function util_makeDoubles(value) {
  value= replace (value, '"', '"');
}

function nvp_exists(AVString, attribute, returnBoo){

  util_splitAV(AVString, avContext);
  //log(avContext);

  returnBoo = FALSE;
  count=0;
  while (count < length(avContext.attributes) and returnBoo = FALSE) {
```

```

        x = avContext.attributes;
        y = x[count];
        //log(y);

        if (y == attribute) {
            returnBoo = TRUE;
            //avContext.value = avContext.values[count];
        }

        count = count + 1;
    }
}

function nvp_get(AVString, attribute, returnValue) {
    util_splitAV(AVString, avContext);
    //log(avContext);

    returnValue = NULL;

    count=0;
    while (count < length(avContext.attributes) and returnValue = NULL) {
        x = avContext.attributes;
        y = x[count];
        //log(y);

        if (y == attribute) {
            returnValue = avContext.values[count];
            util_stripEnds(returnValue);
            util_removeDoubles(returnValue);
        }

        count = count + 1;
    }

    //attribute does not appear to exist, EXCEPTION
    if (returnValue == NULL) {
        log("attribute " + attribute + " does not exist");
        raise nvpGetInvalidAttribute("nvp_get failed: attribute does not exist");
    }
}

function nvp_add(AVString, attribute, value) {
    //if it exists, error out
    nvp_exists(AVString, attribute, returnBoo);
    //log(returnBoo);
    if (returnBoo == TRUE) {
        raise nvpAddExistingAttribute("nvp_add failed: attribute already exists");
        log("attribute already exists; use OMNI.nvp_set instead");
    }

    //if it doesn't exist, add it
    elseif (returnBoo == FALSE) {
        util_makeDoubles(value);
        attribute = replace(attribute, ";", " ", 1000);
        value = replace(value, ";", " ", 1000);
        AVString = AVString + ";" + attribute + "=" + '"' + value + '"';
    }
}

function nvp_set(AVString, attribute, value) {
    //if it exists, change it

    nvp_exists(AVString, attribute, returnBoo);
    //log(returnBoo);
    if (returnBoo == FALSE) {
        raise nvpSetInvalidAttribute("nvp_set failed: attribute does not exist");
        log("attribute " + attribute + " does not exist; use OMNI.nvp_add instead");
    }

    elseif (returnBoo == TRUE) {
        //set the value
        //get value, then use replace on AVString
        nvp_get(AVString, attribute, returnValue);
        util_makeDoubles(returnValue);
        value = replace(value, ";", "_", 1000);
        //log(returnValue);
        util_makeDoubles(value);
        AVString = replace(AVString, attribute + "=" + '"' + returnValue + '"', attribute + "=" + '"' + value + '"', 1);
    }
}

function nvp_remove(AVString, attribute) {
    //if it's already not there, throw exception
    nvp_exists(AVString, attribute, returnBoo);
    //log(returnBoo);
    if (returnBoo == FALSE) {
        raise nvpRemoveInvalidAttribute("nvp_remove failed: attribute does not exist");
        log("attribute does not exist; can't remove :)");
    }

    elseif (returnBoo == TRUE) {
        //attribute is there, we need to remove it
        nvp_get(AVString, attribute, returnValue);
        //log(returnValue);

        AVString = replace(AVString, attribute + "=" + '"' + returnValue + '"', "");
        AVString = replace(AVString, ";", ";");

        //remove ending ; if there is one
        x = length(AVString);

```

```

        y = substring(AVString, x-1, x);
        //log(y);
        if (y == ";") {
            //substring out everything else
            AVString = substring(AVString, 0, x - 1);
        }
    }
}

```

## NVP test/example code

```

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@ExtendedAttr = 'First="Thomas";Last="Daniel";Age="37";Hair="Brown";Nickname="Ears"';

log("Starting values for ExtendedAttr = " + @ExtendedAttr);

// TESTING
//OMNI.nvp_get OMNI.nvp_set OMNI.nvp_add OMNI.nvp_exists OMNI.nvp_remove

testAttributeA = "Age";
testValueA = "38";

testAttributeB = "OS";
testValueB = "Ubuntu";

testAttributeC = "Nickname";
testValueC = "elf";

testAttributeD = "First";
testValueD = "Tom";

testAttributeE = "Last";
testValueE = "Daniel";

testAttributeF = "Sweater;Color";
testValueF = "Black";

/*
////////// nvp_exists
log("***** nvp_exists *****");
// OMNI.nvp_exists-- TRUE
OMNI.nvp_exists(@ExtendedAttr, testAttributeA, returnBool);
log(testAttributeA + " exists? " + returnBool);

// OMNI.nvp_exists-- FALSE
OMNI.nvp_exists(@ExtendedAttr, testAttributeB, returnBool);
log(testAttributeB + " exists? " + returnBool);

// OMNI.nvp_exists-- TRUE with "" in value
OMNI.nvp_exists(@ExtendedAttr, testAttributeC, returnBool);
log(testAttributeC + " exists? " + returnBool);

////////// nvp_get
log("***** nvp_get *****");
// attribute without escaped quotes
OMNI.nvp_get(@ExtendedAttr, testAttributeA, returnValue);
log(testAttributeA + " value is: " + returnValue);

// attribute with escaped quotes
OMNI.nvp_get(@ExtendedAttr, testAttributeC, returnValue);
log(testAttributeC + " value is: " + returnValue);

////////// nvp_set
log("***** nvp_set *****");
// attribute without escaped quotes
log("changing value for " + testAttributeA + " to " + testValueA);
OMNI.nvp_set(@ExtendedAttr, testAttributeA, testValueA);
log(@ExtendedAttr);

// attribute with escaped quotes
log("changing value for " + testAttributeC + " to " + testValueC);
OMNI.nvp_set(@ExtendedAttr, testAttributeC, testValueC);
log(@ExtendedAttr);

// attribute with NEW escaped quotes
log("changing value for " + testAttributeD + " to " + testValueD);
OMNI.nvp_set(@ExtendedAttr, testAttributeD, testValueD);
log(@ExtendedAttr);

// ; in value
log("changing value for " + testAttributeE + " to " + testValueE + ". ; will be replaced with _");
OMNI.nvp_set(@ExtendedAttr, testAttributeE, testValueE);
log(@ExtendedAttr);

////////// nvp_add
log("***** nvp_add *****");
// new attribute
log("adding attribute " + testAttributeB + " with a value of " + testValueB);
OMNI.nvp_add(@ExtendedAttr, testAttributeB, testValueB);
log(@ExtendedAttr);

// new attribute, ; in attribute name and value
log("adding attribute " + testAttributeF + " with a value of " + testValueF + ". ; will be replaced with _");
OMNI.nvp_add(@ExtendedAttr, testAttributeF, testValueF);
log(@ExtendedAttr);

```

```

*/

////////////////////////////////////// these throw exceptions
/*
// nvp_get with a non-existent attribute; throws exception
OMNI.nvp_get(@ExtendedAttr, testAttributeB, returnValue);
log(testAttributeB + " value is: " + returnValue);

// nvp_set with a non-existent attribute; throws exception
log("Changing value for " + testAttributeB + " to " + testValueB);
OMNI.nvp_set(@ExtendedAttr, testAttributeB, testValueB);
log(@ExtendedAttr);

// nvp add using existing attribute; throws exception
log("adding attribute " + testAttributeA + " with a value of " + testValueA);
OMNI.nvp_add(@ExtendedAttr, testAttributeA, testValueA);
log(@ExtendedAttr);
*/

```

### insertJournalEntry

```

-----
//
//
// insertJournalEntry- this IPL function will create a journal entry
// of 'text' for event with serial# 'serial' in
// data source 'datasource'.
//
//
// The OOB function for creating journal entries
// does not support 2+ entries for same serial
// in same second.
//
//
//-----

Function insertJournalEntry ( datasource, serial, text )
{
    UID = 16; // user impact
    Chrono = GetDate();
    randNum = Random(100000); // this is added to support 2+ entries made for same serial# in same second
    KeyField = serial + ":" + UID + ":" + Chrono + ":" + randNum;

    // journal entry text (jet) array - 16 "text fields" each varchar(255)
    jet = { " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " " };

    index = 0;
    while( (Length(text)>0) and (index<Length(jet)) )
    {
        jet[index] = Substring(text, 0, 256);
        if(Length(text)>255)
        {
            text = Substring(text, 256, Length(text));
        }
        else
        {
            text="";
        }
        index = index + 1;
    }

    insertStmt = "insert into alerts.journal ( KeyField,Serial,UID,Chrono,Text1,Text2,Text3,Text4,Text5,Text6,Text7,Text8,Text9,Text10,Text11,Text12,Text13,Text14,Text15,Text16)";
    insertStmt = insertStmt + " values ( '" + KeyField + "', " + serial + ", " + UID + ", " + Chrono;
    index=0;
    while(index<Length(jet))
    {
        insertStmt = insertStmt + "," + Replace(jet[index], "'", "\'") + "'";
        index = index + 1;
    }
    insertStmt = insertStmt + ")";

    DirectSQL( datasource, insertStmt, False );
}

```

## Statistical Functions Written in IPL

### Summation (arrayOfNumbers, returnValue)

This puts the sum of the passed numbers in returnValue.

```

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*****/

function summation(s, r){
    r = NULL;

    if ( length(s) > 0 ) {
        // total them up
        r = 0;
        n = 0;
        while ( n < length(s) ){
            r = r + s[n];
            n = n + 1;
        }
    }
}

```

### average (arrayOfNumbers, returnValue)

puts the average of the numbers in returnValue

```

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```

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function average(s, r){
    r = NULL;

    if ( length(s) > 0 ) {
        // total them up
        summation(s, myReturn);
        if (myReturn != NULL){
            r = myReturn / length(s);
        }
    }
}

```

## median (arrayOfNumbers, returnValue)

puts the median of the numbers in returnValue

```

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function median(s, r){
    L = length(s);
    h = L / 2;
    m = L % 2;

    if (m == 0) {
        // L is an even number
        // median is the average of the middle 2 numbers
        h = h - 1;
        h2 = h + 1;
        a = {s[h], s[aabsmenbl:h2]};
        average(a, r);
    }
    else{
        // L is an odd number
        // median is the middle number
        // int() truncates it does NOT round. Help text is wrong.
        h2 = int(h);
        r = s[aabsmenbl:h2];
    }
}

```

## Modes (array, returnValue)

This puts an array of modal values in the returnValue (there can be more than one mode).

```

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//helper function getCounts
function getCounts(dis, all, return){
    //count is an array
    count={};
    i = 0;
    while ( i < length(dis) ){
        count = count + 0;
        j = 0;
        while (j < length(all) ) {
            //log("i value is: " + dis[i] + " j value is: " + all[j]);
            if (dis[i] == all[j]) {
                count[i] = count[i] + 1;
                //log("count for " + i + " is now: " + count[i]);
            }
            j = j + 1;
        }
        i = i + 1;
    }
    return count;
}

function modes(s, r){
    sD = distinct(s);
    //log(sD);

    // so we counts for each item in sD
    // s0 object will hold the counts for each item in sD
    getCounts(sD, s, sF);
    //log(sF);

    i = 0;
    r = {};
    r = r + "sD[i]";
    top = 0;
    while(i < length(sD)){
        if (sF[i] == top){
            //add to r

```

```

        r = r + sD[i];
    }
    if (sF[i] > top){
        //clear out r
        r = {};
        r = r + sD[i];
        top = sF[i];
    }
    i = i + 1;
} //log(r);
}

```

## Code for Manipulating Strings

### Return Last Character of a String

```

function getLastChar(fullString, lastChar){
    a = length(fullString);
    lastChar = substring(fullString, a - 1, a);
}

```

### Return First Character of a String

```

function getFirstChar(fullString, firstChar){
    firstChar = substring(fullString, 0, 1);
}

```

### Put Double Quotes Around a String

```

function quoteString(theString){
    //put double quotes at the beginning and end of a string
    //checks to make sure end characters are not already strings

    getFirstChar(theString, firstChar);
    getLastChar(theString, lastChar);
    if ((firstChar != '"' and (lastChar!=''))){
        theString = '"' + theString + '"';
    }

    if ((firstChar == '"' and (lastChar!=''))){
        theString = theString + '"';
    }

    if ((firstChar != '"' and (lastChar==''))){
        theString = '"' + theString;
    }
}

```

### inBoth Takes Two Arrays and Returns a Third Array Comprised of Items that are in Both of the First Arrays

```

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*****/

function inLongerList(itemi, longList, inBothList){
    j = 0;
    while (j < length(longList)){
        if (itemi == longList[j]){
            inBothList = inBothList + itemi;
            j = length(longList);
        }
        j = j + 1;
    }
}

function shorterList(list1, list2, shortList, longList){
    if (length(list1) < length(list2)){
        shortList=list1;
        longList=list2;
    }
    else{
        shortList=list2;
        longList=list1;
    }
}

function inBoth(list1, list2, inBothList){
    //takes two arrays and produces a third array that is made up of items in both of the first arrays
    shorterList(list1, list2, shortList, longList);
    i = 0;
    inBothList={};
    while (i < length(shortList) ){
        inLongerList(shortList[i], longList, inBothList);
        i = i + 1;
    }
}

```

## Accessing Services from a Policy

There is an Internal Type called Service which can be accessed in the policy. We can use that to do pretty much anything we can do from the CommandLineService. The example below shows how to check if the OMNibusEventReader service is running, and if it is not, how to start it from the policy.

```

OMNIBusReader = GetByFilter("Service", "Name = 'OMNIBusEventReader'", false);
serviceRunning = OMNIBusReader\[0\].Running;

log("Is Running? : " + serviceRunning);
if (serviceRunning == false) \{
    OMNIBusReader\[0\].Running = TRUE;
\}

```

## using java.util.Calendar to better work with time zones

```

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*****/

/*****
This creates a java.util.Calendar instance in the variable CALENDAR.
TZ should be one of the time zones supported by the java.util.Calendar class.
The included function getTimeZones() will log the time zones supported by java.util.Calendar in your Impact server
*/

function newCalendar(TZ, IMPEPOCH, CALENDAR)
{
    log(3, "creating a calendar for time zone " + TZ);
    log(3, "epoch time is " + IMPEPOCH);

    //create a time zone object
    timeZone=javacall("java.util.TimeZone", null, "getTimeZone",{TZ});

    //create a calendar object
    CALENDAR = javacall("java.util.Calendar", null, "getInstance", {});

    //tweak calendar to reflect give time and time zone
    javacall(null, CALENDAR, "setTimeZone", {timeZone});
    javacall(null, CALENDAR, "setTimeInMillis", {(IMPEPOCH*1000)});

    //for troubleshooting...
    log(3, CALENDAR);
}

//newCalendar test
now = getdate();
tz = "CST";
newCalendar(tz, now, newCalendar);

/*****
Useful functions for working with the Calendar object
See the API for the java.util.Calendar class for more values you can set or pull out
*/

/*
gets list of all of the supported time zones
*/

function getTimeZones(tzList)
{
    tzList = javacall("java.util.TimeZone", null, "getAvailableIDs", {});
}

//getTimeZones(x);
//log("Support time zones are: " + x);

/*
getDayOfMonth gets the day of month as an integer, eg 15
*/

function getDayOfMonth(calendar, DOM)
{
    DOMInt = getFieldValue(null, calendar, "DAY_OF_MONTH");
    DOM = javacall(null, calendar, "get", {DOMInt});
}

//getDayOfMonth test
getDayOfMonth(newCalendar, DOM);
log("The calendar object's day of month is: " + DOM);

/*
getDayOfWeek gets the day of the month as a 3-character string, eg Sun
*/

function getDayOfWeek(calendar, DOW)
{
    DOWInt = getFieldValue(null, calendar, "DAY_OF_WEEK");
    DOWInt = javacall(null, calendar, "get", {DOWInt});
}

```

```

    if (DOWInt ==1) {DOW="Sun";}
    if (DOWInt ==2) {DOW="Mon";}
    if (DOWInt ==3) {DOW="Tue";}
    if (DOWInt ==4) {DOW="Wed";}
    if (DOWInt ==5) {DOW="Thu";}
    if (DOWInt ==6) {DOW="Fri";}
    if (DOWInt ==7) {DOW="Sat";}

}

//getDayOfWeek test
getDayOfWeek(newCalendar, DOW);
log("The calendar object's day of the week is: " + DOW);

/*
getHHMMSS gets the HH:MM:SS string for the given calendar object
The time zone value in the calendar object determines what values are returned
*/
function getHHMMSS(calendar, HHMMSS)
{
    log(3, "Generating the HH:MM:SS for the given time zone");

    HHInt = getFieldValue(null, calendar, "HOUR_OF_DAY");
    HH = javacall(null, calendar, "get", {HHInt});
    HH = int(HH);
    HH=string(HH);
    log(3, "HH is " + HH);
    if(int(HH) < 10){HH="0" + HH;}

    MMInt = getFieldValue(null, calendar, "MINUTE");
    MM = javacall(null, calendar, "get", {MMInt});
    MM = int(MM);
    MM=string(MM);
    log(3, "MM is " + MM);
    if(int(MM) < 10){MM="0" + MM;}

    SSInt = getFieldValue(null, calendar, "SECOND");
    SS = javacall(null, calendar, "get", {SSInt});
    SS = int(SS);
    SS=string(SS);
    log(3, "SS is " + SS);
    if(int(SS) < 10){SS="0" + SS;}

    HHMMSS = HH + ":" + MM + ":" + SS;
    log(3, "HH:MM:SS is " + HHMMSS);
}

//getHHMMSS test
getHHMMSS(newCalendar, HHMMSS);
log("The calendar object's HHMMSS is: " + HHMMSS);

/*
getyyyyMMdd gets the yyyy-MM-dd string for the given java.util.Calendar object
The time zone value in the calendar object determines what values are returned
*/
function getyyyyMMdd(calendar, yyyyMMdd)
{
    //log(3, "Generating the yyyy-MM-dd for the given time zone");

    //what is the yyyy-MM-dd in that time zone?
    yearInt = getFieldValue(null, calendar, "YEAR");
    tzYear = javacall(null, calendar, "get", {yearInt});
    //log(3, "year in this time zone is " + tzYear);
    //eg 2009

    monthInt = getFieldValue(null, calendar, "MONTH");
    tzMonth = javacall(null, calendar, "get", {monthInt});
    tzMonth = tzMonth + 1; //Calendar object uses 0 for January while Impact parsedate function uses 1
    if (tzMonth < 10) {tzMonth = "0" + string(tzMonth);}
    //log(3, "month in this time zone is " + tzMonth);
    //eg 08

    dateInt = getFieldValue(null, calendar, "DATE");
    tzDate = javacall(null, calendar, "get", {dateInt});
    if (tzDate < 10) {tzDate = "0" + string(tzDate);}
    //log(3, "date in this time zone is " + tzDate);
    //eg 04

    yyyyMMdd = tzYear + "-" + tzMonth + "-" + tzDate;
    log(3, "yyyy-MM-dd is " + yyyyMMdd);
}

//testing
getyyyyMMdd(newCalendar, yyyyMMdd);
log("The calendar object's yyyyMMdd is: " + yyyyMMdd);

/*
setCalendarTimeZone changes the TZ (and thus the various time measures) for a given java.util.Calendar object
*/
function setCalendarTimeZone(tz, CALENDAR)
{
    timeZone=javacall("java.util.TimeZone", null, "getTimeZone",{tz});
    javacall(null, CALENDAR, "setTimeZone", {timeZone});
}

//testing setCalendarTimeZone
log("changing the time zone to Europe/London");
setCalendarTimeZone("Europe/London", newCalendar);

getDayOfMonth(newCalendar, DOM);
log("The calendar object's day of month is: " + DOM);

getDayOfWeek(newCalendar, DOW);
log("The calendar object's day of the week is: " + DOW);

getHHMMSS(newCalendar, HHMMSS);

```

```
log("The calendar object's HHMMSS is: " + HHMMSS);
getyyyyMMdd(newCalendar, yyyyMMdd);
log("The calendar object's yyyyMMdd is: " + yyyyMMdd);
```

## Parsing a JSON String into a variable and travers it

example code to traverse a JSON string

(thx Yasser 😊)

```
env='{ "color": "red", "value": "#f00", "Serial": 2 }';

JSONObject=ParseJSON(env);
Log("JSONObject: " + JSONObject);

columns=JavaCall(null, JSONObject, "getVarNames", null);
Log("Array 1: " + columns);

// log the class to see Array ? or String ? ( 1 or more items underneath)
Log("Class of columns: " + ClassOf(columns));

NrOfColumns=Length(columns);
Log("NrOfColumns: " + NrOfColumns);

// start the walk loop
Counter=0 ;
while Counter < NrOfColumns )
{
  // log the next level and traverse deeper if needed
  Log("columns[" + Counter + "]= " + columns[Counter]);
  Counter = Counter + 1 ;
}
```

## Parsing a NodeClickedOn Event

Example code to parse incoming NodeClickedOn Event coming from JazzSM in Impact

This is a example to parse the NodeClickedOn Event coming from Omnibus Webgui.

```
// the product variable has the content of the NodeClickedOn Event
if ( product != "" && product != null ) {

  // walk into the JSON formatted event
  result= ParseJSON(product);
  records = result.OMNIBUSWebGUI;
  dc= records.displaycontext;

  fields = dc.fields;

  // fiels contains all the fields from the clicked alert
  log("Fields=" + fields);

  // use the Serial number field as example
  Serial = fields.Serial;
}
```

## Starting, Stopping and Querying the status of an Event Reader

In [Command Line Syntax for Impact Services](#) you will find several possibilities to do things with Impact from the outside. One of the most common needs at our side was to stop/start and query the status of an event reader. Stopping an event reader will allow you to bring Impact into a hold or maintenance mode without a lengthy shutdown of the complete (cluster) instance(s). Stopping/starting an event reader this way will only take a second.

The attached [script](#) is an example how to do this. A requirement for this to work is nccat (nc) and if you don't have a bash shell you have have to modify the script a little.

```
#!/bin/bash
#
# Allows to stop and start the OMNIBUS Event Reader on Impact

TIDEBASE="/opt/tide"
DIRNAME=`dirname $0`
SCRIPTNAME=`basename $0`
#PARAM=${2:-""}
READERNAME="OMNIBUSEventReader"

source $TIDEBASE/lib/tide_lib.sh

# GENERAL FUNCTIONS
function print_status {
  case $1 in
    0) echo -e "\E[32m$2\E[39m"
      ;;
    1) echo -e "\E[31m$3\E[39m"
      ;;
    *) echo -e "\E[31mERROR\E[39m $1"
  esac
}

function impact_cmd {
```

```

nc localhost 2000 <<EOF
admin
netcool
$@
quit
EOF
}

function impact_service {
    f_READERNAME=$1
    f_READERSTATE=$2
    f_READERSTATUS=$3
    CMD="Update Service set Running=$f_READERSTATE where Name='$f_READERNAME';"
    impact_cmd $CMD >/dev/null
    impact_cmd $CMD >/dev/null
    CMD="Select Running from Service where Name='$f_READERNAME';"
    impact_cmd $CMD|grep "$f_READERSTATE" >/dev/null
    STATUS=$?
    print_message "$f_READERNAME $f_READERSTATUS"
    print_status "$?"-"YES" "NO"
}

function start {
    impact_service "$READERNAME" "true" "started"
}

function stop {
    impact_service "$READERNAME" "false" "stopped"
}

function status {
    CMD="Select Running from Service where Name = '$READERNAME';"
    impact_cmd $CMD|grep "true" >/dev/null
    STATUS=$?
    print_message "$READERNAME runningg"
    print_status "$STATUS" "YES" "NO"
}

function usage {
    echo $"Usage: $SCRIPTNAME <start|stop|status>"
    exit 0
}

# START HERE
case "$1" in
    start)
        start
        ;;
    stop)
        stop
        ;;
    status)
        status
        ;;
    *)
        usage
esac

```

## Emulate an OMNIBus Gateway

**ABSTRACT:** Because of contractual restrictions, we were unable to use the standard gateway to pass events from OMNIBus to the Tivoli Data Warehouse. The customer already has Impact installed, so we configured the following policies to emulate the gateway function. These steps configure Impact to emulate the functions of an ODBC gateway when sending events from the OMNIBus Object Server to a DB2 Database acting as a TDW (Tivoli Data Warehouse)

- Install the TDW schema on DB2
- Configure the Data Source in DB2:
  - Name: TDW\_REPORTER
  - Primary Host: hostname
  - Primary Port: 60000
  - DB User Name: db2inst1
  - Primary Database: REPORTER

Create a data type under the data source above:

- Name: REP\_status
- Data Source Name: defaultobjectserver
- DB Table Name: status
- Key Fields: Identifier
- Enabled: yes

Create two policies:

Policy EventsToTDW\_Insert\_Update - runs on insert and update events in alerts.status, forwards all inserts and updates into the TDW schema in db2:

```

//Check if newly-received event is already a row in the DB2 TDW table
DB2Event = GetByKey('TDW_REPORTER_STATUS', @Identifier,1);
if (Length(DB2Event) == 0)
// Row does not exist - create a new row in the status table
{
    NewTDWentry = newObject();
    NewTDWentry.IDENTIFIER = @Identifier;
    NewTDWentry.SERIAL = @Serial;
    NewTDWentry.NODE = @Node;
    NewTDWentry.NODEALIAS = @NodeAlias;
    NewTDWentry.AGENT = @Agent;
    NewTDWentry.ALERTGROUP = @AlertGroup;
    NewTDWentry.ALERTKEY = @AlertKey;
}

```

```
NewTDWentry.SEVERITY = @Severity;
NewTDWentry.SUMMARY = @Summary;
NewTDWentry.STATECHANGE = LocalTime(@StateChange, "yyyy-MM-dd-hh.mm.ss.SSSSSS");
NewTDWentry.FIRSTOCCURRENCE = LocalTime(@FirstOccurrence, "yyyy-MM-dd-hh.mm.ss.SSSSSS");
NewTDWentry.LASTOCCURRENCE = LocalTime(@LastOccurrence, "yyyy-MM-dd-hh.mm.ss.SSSSSS");
// NewTDWentry.LASTMODIFIED = LocalTime(@InternalLast, "yyyy-MM-dd-hh.mm.ss.SSSSSS");
NewTDWentry.POLL = @Poll;
NewTDWentry.TYPE = @Type;
NewTDWentry.TALLY = @Tally;
NewTDWentry.CLASS = @Class;
NewTDWentry.GRADE = @Grade;
NewTDWentry.LOCATION = @Location;
NewTDWentry.OWNERUID = @OwnerUID;
NewTDWentry.OWNERGID = @OwnerGID;
NewTDWentry.ACKNOWLEDGED = @Acknowledged;
NewTDWentry.FLASH = @Flash;
NewTDWentry.EVENTID = @EventId;
NewTDWentry.EXPIRETIME = @ExpireTime;
// NewTDWentry.PROCESSREQ = @ProcessReq;
NewTDWentry.SUPPRESSESCL = @SuppressEscl;
NewTDWentry.CUSTOMER = @Customer;
NewTDWentry.SERVICE = @Service;
NewTDWentry.PHYSICALSLOT = @PhysicalSlot;
NewTDWentry.PHYSICALPORT = @PhysicalPort;
NewTDWentry.PHYSICALCARD = @PhysicalCard;
NewTDWentry.TASKLIST = @TaskList;
NewTDWentry.LOCALNODEALIAS = @LocalNodeAlias;
NewTDWentry.LOCALPRIOBJ = @LocalPriObj;
NewTDWentry.LOCALSECOBJ = @LocalSecObj;
NewTDWentry.LOCALROOTOBJ = @LocalRootObj;
NewTDWentry.REMOTENODEALIAS = @RemoteNodeAlias;
NewTDWentry.REMOTEPRIOBJ = @RemotePriObj;
NewTDWentry.REMOTESECOBJ = @RemoteSecObj;
NewTDWentry.REMOTEROOTOBJ = @RemoteRootObj;
NewTDWentry.X733EVENTTYPE = @X733EventType;
NewTDWentry.X733PROBABLECAUSE = @X733ProbableCause;
NewTDWentry.X733SPECIFICPROB = @X733SpecificProb;
NewTDWentry.X733CORRNOTIF = @X733CorrNotif;
NewTDWentry.SERVERNAME = @ServerName;
NewTDWentry.SERVERSERIAL = @ServerSerial;
// NewTDWentry.ORIGINALSEVERITY = @Severity;
// NewTDWentry.DELETEDAT = @StateChange;
NewTDWentry.INTERNALLAST = LocalTime(@InternalLast, "yyyy-MM-dd-hh.mm.ss.SSSSSS");
NewTDWentry.URL = @URL;
// NewTDWentry.EXTENDEDATTR = @ExtendedAttr;
// NewTDWentry.OLDROW = @OldRow;
// NewTDWentry.PROBESUBSECONDDID = @ProbeSubSecondId;
// NewTDWentry.TECHOSTNAME = @TECHostname;
// NewTDWentry.TECFQHOSTNAME = @TECFQHostname;
// NewTDWentry.TECDATE = @TECDate;
// NewTDWentry.TECREPEATCOUNT = @TECRepeatCount;
// NewTDWentry.TECSTATUS = @TECStatus;
// NewTDWentry.TECSEVERHANDLE = @TECServerHandle;
// NewTDWentry.TECEVENTHANDLE = @TECEventHandle;
// NewTDWentry.TECDATERECEPTION = @TECDateReception;
NewTDWentry.BSM_IDENTITY = @BSM_Identity;
NewTDWentry.BSM_SUBIDENTITY = @BSM_SubIdentity;
NewTDWentry.ZOS_SEQUENCENO = @ZOS_SequenceNo;
NewTDWentry.ZOS_CLASSID = @ZOS_ClassID;
NewTDWentry.ZOS_EVENTID = @ZOS_EventID;
```

```
NewTDWentry.ZOS_MSGSTATE = @ZOS_MsgState;
NewTDWentry.ZOS_ACTION = @ZOS_Action;
NewTDWentry.ZOS_FORMAT = @ZOS_Format;
NewTDWentry.ZOS_ISUSERSEVERITY = @ZOS_IsUserSeverity;
NewTDWentry.ZOS_RESOURCENAME = @ZOS_ResourceName;
NewTDWentry.ZOS_SUBRESOURCENAME = @ZOS_SubResourceName;
NewTDWentry.ZOS_SUBRESOURCETYPE = @ZOS_SubResourceType;
NewTDWentry.BSM_CLASSNAME = @BSM_ClassName;
NewTDWentry.TICKET_ELIGIBLE = @ticket_eligible;
NewTDWentry.ITMSTATUS = @ITMStatus;
NewTDWentry.ITMDISPLAYITEM = @ITMDisplayItem;
NewTDWentry.ITMEVENTDATA = @ITMEventData;
NewTDWentry.ITMTIME = @ITMTime;
NewTDWentry.ITMHOSTNAME = @ITMHostname;
NewTDWentry.ITMINTTYPE = @ITMIntType;
NewTDWentry.ITMRESETFLAG = @ITMResetFlag;
NewTDWentry.RAD_SERVICENAME = @RAD_ServiceName;
NewTDWentry.RAD_SLANAME = @RAD_SLAName;
NewTDWentry.RAD_SERVICEID = @RAD_ServiceID;
NewTDWentry.RAD_SERVICETYPENAME = @RAD_ServiceTypeName;
NewTDWentry.RAD_SERVICETYPEID = @RAD_ServiceTypeID;
NewTDWentry.RAD_FILTERIDLIST = @RAD_FilterIDList;
NewTDWentry.RAD_FUNCTIONNAME = @RAD_FunctionName;
NewTDWentry.RAD_USERFUNCTIONNAME = @RAD_UserFunctionName;
NewTDWentry.RAD_ISINTERMEDIATEFUNCTION = @RAD_IsIntermediateFunction;
NewTDWentry.RAD_FUNCTIONTYPE = @RAD_FunctionType;
NewTDWentry.RAD_TIMEWINDOW = @RAD_TimeWindow;
NewTDWentry.RAD_TIMEWINDOWSTART = LocalTime(@RAD_TimeWindowStart, "yyyy-MM-dd-hh.mm.ss.SSSSS");
NewTDWentry.RAD_TIMEWINDOWEND = LocalTime(@RAD_TimeWindowEnd, "yyyy-MM-dd-hh.mm.ss.SSSSS");
NewTDWentry.RAD_TIMEWINDOWLENGTH = @RAD_TimeWindowLength;
NewTDWentry.RAD_CURRENTRAWMETRIC = @RAD_CurrentRawMetric;
NewTDWentry.RAD_CURRENTRAWMETRICNUMERIC = @RAD_CurrentRawMetricNumeric;
NewTDWentry.RAD_CURRENTRELATIVEMETRIC = @RAD_CurrentRelativeMetric;
NewTDWentry.RAD_CURRENTFUNCTIONSTATE = @RAD_CurrentFunctionState;
NewTDWentry.RAD_THRESHOLDNUM = @RAD_ThresholdNum;
NewTDWentry.RAD_VIOLATIONTHRESHOLDRELATIVEM = @RAD_ViolationThresholdRelativeM;
NewTDWentry.RAD_VIOLATIONTHRESHOLDRAWMETRIC = @RAD_ViolationThresholdRawMetric;
NewTDWentry.RAD_VIOLATIONREMAININGRAWMETRIC = @RAD_ViolationRemainingRawMetric;
NewTDWentry.RAD_NEXTTHRESHOLDRELATIVEMETRIC = @RAD_NextThresholdRelativeMetric;
NewTDWentry.RAD_NEXTTHRESHOLDRAWMETRIC = @RAD_NextThresholdRawMetric;
NewTDWentry.RAD_NEXTTHRESHOLDREMAININGRAWM = @RAD_NextThresholdRemainingRawM;
NewTDWentry.RAD_TOTALRAWMETRIC = @RAD_TotalRawMetric;
NewTDWentry.RAD_RAWINPUTVALUE = @RAD_RawInputValue;
NewTDWentry.RAD_RAWINPUTLASTVALUE = @RAD_RawInputLastValue;
NewTDWentry.RAD_LASTCOUNT = @RAD_LastCount;
NewTDWentry.RAD_WEBTOPTOOL1 = @RAD_WebtopTool1;
NewTDWentry.RAD_WEBTOPTOOL2 = @RAD_WebtopTool2;
AddDataItem('TDW_REPORTER_STATUS', NewTDWentry);
}
else
// Row exists - update those fields which were updated on deduplication
{
    Filter = "IDENTIFIER='"+@Identifier+"'";
    LocalLastOccurrence = LocalTime(@LastOccurrence, "yyyy-MM-dd-hh.mm.ss.SSSSS");
    LocalStateChange = LocalTime(@StateChange, "yyyy-MM-dd-hh.mm.ss.SSSSS");
    LocalInternalLast = LocalTime(@InternalLast, "yyyy-MM-dd-hh.mm.ss.SSSSS");
    UpdateExpression = "TALLY='"+@Tally+", LASTOCCURRENCE='"+LocalLastOccurrence+", STATECHANGE='"+LocalStateChange +"',
INTERNALLAST='"+LocalInternalLast +"', PROBESUBSECONCID='"+@ProbeSubSecondId+", SUMMARY='"+@Summary+"', ALERTKEY='"+@AlertKey+"',
SEVERITY='"+@Severity;
// log (UpdateExpression);
    BatchUpdate('TDW_REPORTER_STATUS', Filter, UpdateExpression);
}
```

Policy **EventsToTDW\_deleted** - runs on deleted events only and updates the corresponding entry in the TDW by adding the time of deletion into the DELETEDAT field of the TDW table.

```
// Policy to process event deletions from object server
// Finds corresponding event in TDW and puts timestamp into DELETEDAT field
// Make sure the event deleted from the object server exists in the DB2 TDW table
// (Use SERIAL because that is the only field provided in the delete )
DB2Event = GetByFilter('TDW_REPORTER_STATUS', "SERIAL='"+@Serial+"'", False);
if (Length(DB2Event) > 0)
// DB2 row exists - so update the time fields and place a time into the DELETEDAT field
// (using GetDate function for time, because deleted even provides no time fields )
{
    Filter = "SERIAL='"+@Serial+"';
    LocalLastOccurrence = LocalTime(GetDate(), "yyyy-MM-dd-hh.mm.ss.SSSSSS");
    LocalStateChange = LocalTime(GetDate(), "yyyy-MM-dd-hh.mm.ss.SSSSSS");
    LocalInternalLast = LocalTime(GetDate(), "yyyy-MM-dd-hh.mm.ss.SSSSSS");
    UpdateExpression = "LASTOCCURRENCE='"+LocalLastOccurrence+"', STATECHANGE='"+LocalStateChange +"'", INTERNALLAST='"+LocalInternalLast
+ "', DELETEDAT='"+LocalStateChange +"'";
    // log ("DELETE NOTIFICATION: "+UpdateExpression);
    BatchUpdate('TDW_REPORTER_STATUS', Filter, UpdateExpression);
}
```

Configure the Event Reader to run on a 60000 msec interval (not absolutely necessary, but emulates the default granularity of the gateway - careful that this change does not disrupt policies already running).

Add Policy EventsToTDW\_Insert\_Update to the mapping on the event reader with the restriction clause set so that it will always run (I used Severity < 9).

Add Policy EventsToTDW\_deleted to run on deleted events in the event reader.

## Video Gallery

Follow the link to reach presentations and videos for Tivoli Netcool/Impact

[ISMConnect Channel \(youtube.com\)](#)

# Performance and Tuning

This section includes performance and tuning information for Tivoli Netcool/Impact. The following topics are available:

- Netcool Impact version 4.x Performance Tests
- Netcool Impact version 6.1 Performance Tuning
- Netcool Impact Version 7.1 Performance Tuning

## Version 4.x Performance Tests

This document includes information about performance testing for **Netcool/Impact 4.x**, and can be found [here](#).

## Version 6.1 Performance Tuning

This document includes information about Performance Tuning for **Netcool/Impact 6.1**, and can be found [here](#).

## Version 7.1 Performance Tuning

This document includes information about Performance Sizing and Tuning for **Netcool/Impact 7.1**, and can be found [here](#).

Subjects covered in this document include:

- System sizings
- CPU recommendations
- policy considerations
- clustered deployment considerations
- Tuning the Impact server
- data type caching
- event processor
- data source pooling

## Troubleshooting

### Accessibility

#### Reading code in the Policy Editor

To improve the readability of technical terms and acronyms used in Impact, you can add new entries to the screen reader's dictionary.

Actual Word	Replacement Word
!=	does not equal
&	ampersand
eval	E val
ipl	I P L
json	J A S O N
roi	R O I
uri	U R I
url	U R L
EAT	E A T
IST	I S T
ROK	R O K
AET	A E T
nth	enth

### Authentication issues

#### Conflicts between users sessions occur when you log in to multiple web applications with the same web browser

##### Symptom

Session issues occur when you log in to multiple web applications in the same web browser.

##### Cause

If you log in to different web applications such as Tivoli Integrated Portal 2.2 and Netcool/Impact 7.1 in the same web browser can overwrite of each other's sessions, causing login prompts to reappear. This occurs when the products are on the same host name or when the SSO domain name is the same between the products, and SSO is not actively being used or properly configured between the products. The LTPA token cookie for SSO is being overwritten between the login sessions for the various web applications.

##### Resolution

Use one of the following solutions.

- Use a different web browser to access each of the individual web application.
- Install the web applications on different servers that contain a different host name.
- Change the SSO domain name to be unique between the two web applications. For more information about the `configImpactSSO` script, see the *Configuring single sign-on (SSO)* topic in the *Security* section of the *Administration Guide*.

#### Impact server is unresponsive

The impact server becomes unresponsive resulting from a conflict between the size of the connection pool for the datasource and the maximum number of threads for the EventProcessor.

##### Symptoms

The impact server becomes unresponsive having run successfully for a number of days. The environment meets the technical requirements for the product and the number of policies running is low.

##### Cause

This issue can result from a conflict between the size of the connection pool for the datasource and the maximum number of threads for the EventProcessor.

##### Resolution

Ensure that the size of the connection pool configured for the datasource is greater than the maximum number of processing threads in the EventProcessor.

#### Web Services connection fails with 'Certificate chaining error'

The connection from Web Services to an external system over HTTPS results in a 'Certificate chaining error' error.

##### Symptom

The following error message is printed in the SystemOut.log file:

```
HttpMethodDir I org.apache.commons.httpclient.HttpMethodDirector
executeWithRetry I/O exception (org.apache.axis2.AxisFault) caught when processing request:
com.ibm.jsse2.util.g: PKIX path building failed: java.security.cert.CertPathBuilderException:
PKIXCertPathBuilderImpl could not build a valid CertPath.; internal cause is:
java.security.cert.CertPathValidatorException: The certificate issued by
CN=XXXXXX, OU=CAs, OU=PKI, OU=XXX, O=XXX, C=AU is not trusted; internal cause is:
java.security.cert.CertPathValidatorException: Certificate chaining error
```

#### Cause

The 'Certificate chaining error' indicates that the intermediate certificate or certificates are not installed on the server. If a certificate is not a self-signed/root certificate it requires that intermediate certificates are installed to link this certificate up to the root certificate authority.

#### Resolution

You must export the required intermediate certificates from the external system and add them to the application server trust store.

- To export an intermediate certificate in Internet Explorer:
  1. Go to Tools > Internet Options > Content > Certificates.
  2. Select the certificate from the list and click Export to export it.
  3. Choose the DER encoded Binary Format type, and the location where you want to export the certificate.
  4. Click Save.
- To export an intermediate certificate in Firefox:
  1. Go to Tools > Options > Advanced > Encryption > View Certificates.
  2. In the Certificate Manager window, click the Authorities tab.
  3. Select the certificate from the list and click Export... to export it.
  4. Choose the X.509 Certificate (DER) type, and the location where you want to export the certificate.
  5. Click Save.

You must now import the exported intermediate certificate by following the "*Adding a certificate to the application server trust store*" procedure in the "*Administration Guide*".

## Server fails to startup when using LDAP based authentication

### Symptoms

The impact server is unable to startup when you have setup a LDAP repository for authentication.

### Cause

This issue can occur when using LDAP based authentication with more than one repositories, if any one of them is unreachable (ex: Network cable is out, Network Interface card is corrupted etc). Note: This is only if one or more LDAP servers are unreachable. In this case, even a ping from the machine where Impact server is running to the target LDAP server machine hangs and never returns back.

### Resolution

Once the network communication problem in the machine where LDAP server is setup gets resolved, it should fix the Impact server startup issue. The other option is to comment out the rogue LDAP server information from ldapRegistry.xml and only use the LDAP server which is running and reachable.

## Character set encoding and special character issues

### PDF code examples with single quotation marks

How to resolve issues with PDF code examples with single quotation marks.

Throughout the documentation, there are code examples that you can copy and paste into the product. In instances where code or policy examples that contain single quotation marks are copied from the PDF documentation the code examples do not preserve the single quotation marks. You need to correct them manually. To avoid this issue, copy and paste the code example content from the html version of the documentation.

## The IBM Dashboard Applications Services Hub widgets display a mixture of languages

### Symptom

In the IBM Dashboard Applications Services Hub, the widgets display a mixture of languages.

### Resolution

1. For each Impact Server that is listed on the Connections page of Dashboard Applications Services Hub, you need to connect to each server remotely.
2. Stop the GUI server and the Impact server.
3. Set the server locale to be whichever language you choose using the environment variables LANG and LC\_ALL. For example:

```
export LANG=ru_RU.UTF-8
export LC_ALL=ru_RU.UTF-8
```

4. Start both GUI and Impact servers.

### Syntax error message for a missing library

How to resolve a syntax error message that indicates a missing library.

### Symptoms

A policy file included in the \$IMPACT\_HOME/jslib directory has a syntax error because of a missing curly brace } in a function. The error message reports this issue as a missing library.

### Resolution

- If the library is not in the \$IMPACT\_HOME/jslib directory, copy the library to the \$IMPACT\_HOME/jslib directory.
- If the library is in \$IMPACT\_HOME/jslib directory, then check the syntax of the policy file for the missing curly brace } in a function.

### Syntax errors in a policy generated by the XinY policy wizard

Syntax errors occur for a policy created using the XinY policy wizard.

#### Symptom

Create an XinY policy using the XinY policy wizard. Click the Check Syntax icon to check the policy syntax. A Syntax Error window opens showing several syntax errors.

#### Resolution

This is an known issue. Ignore the information in the Syntax Error window. The policy works correctly.

---

### Uploaded policies do not display correctly in the policy editor

How to resolve issues where uploaded policies do not display correctly in the policy editor.

#### Symptoms

A policy uploaded without an encoding option selected fails to render properly in the policy editor. The policy displays with garbled or incomplete content.

#### Resolution

Before uploading a policy file, ensure that the file has been encoded as UTF-8 or one of the other encoding options in the following list. When uploading a policy you must select the encoding option from the list menu which matches the encoding of the policy file.

Supported encoding options:

- Unicode (UTF-8)
  - Simplified Chinese (GB2312)
  - Traditional Chinese (Big5)
  - Japanese (EUC-JP)
  - Japanese (Shift-JIS)
  - Korean (EUC-KR)
  - Western (Windows 1252)
  - Western European (ISO 8859-1)
  - Eastern European (ISO 8859-2)
  - Baltic (ISO 8859-4)
  - Cyrillic (ISO 8859-5)
  - Arabic (ISO 8859-6)
  - Greek (ISO 8859-7)
  - Hebrew (ISO 8859-8)
  - Turkish (ISO 8859-9)
- 

### Modifying the character encoding for OSLC

You can change the default character encoding for OSLC if your specific circumstances require it.. The default character encoding value for OSLC is UTF-8. You only need to change this in very specific circumstances.

#### Procedure

To change the character encoding, change the following statement in the `NCI_oslc.props` file:

```
impact.oslc.encoding=<Value>
```

where `<Value>` is the value that you want to use for character encoding. The default value is UTF-8.

---

### Using special characters in OSLC and UI data provider policies

You cannot use special characters like the comma (,) and ampersand (&) characters in policies that provide data to the OSLC provider or the UI data provider because these characters are reserved.

Special characters like the comma and ampersand characters are reserved as special characters. You cannot use these characters in policies that provide data to the OSLC provider or the UI data provider. To display a different field name, use the `AS` keyword to replace the reserved characters.

#### Example

For example, add the following statement to a policy:

```
SELECT "My&Test" AS My_Test FROM test_table
```

The policy returns the field name `My_Test` instead of `My&Test`.

---

### Oracle database table Special Characters issue

#### Symptom

Netcool/Impact Oracle DSA Datatype cannot discover the Base Table (schema or table). The Table name is not listed and appears as a series of underscores.

#### Cause

The Table name contains a Special Character (non-alphanumeric).

#### Resolution

Netcool/Impact includes a Special Character handling capability:

Data Type configuration for an Oracle data source is broken by tables with \$ characters.

The following code is the content of the file named `database_specialchars.props`, which you must place in the `$IMPACT_HOME/etc` directory if the database tables or schemas contain special characters.

```
## START:
##
## The following 4 special characters are reserved and handled by IMPACT.
##
## If you would like to add another special character to avoid viewing the
## schema problem, please start from 5 and use different replace values.
##
## Adding additional characters will only handle the Data Type Configuration
## view, we don't support any other characters than the first four to get table
## information.
```

```
# If there is no special characters in the database schema, specialchar.num can
# be 0.
#
# NOTE: Character $ (dollar sign) is not considered as a special character,
# therefore do not include it in this list.

specialchar.num=0

specialchar.1=%
specialchar.replace.1=__PF__

specialchar.2=#
specialchar.replace.2=__BF__

specialchar.3=*
specialchar.replace.3=__SF__

specialchar.4=-
specialchar.replace.4=__DF__

## END
```

This file does not exist in Netcool/Impact by default and must be created using the User profile used to install and run Impact. You can add to the file by incrementing the index value of each additional special character being mapped or replaced, for example: `specialchar.5=`, `specialchar.replace.5=__FF__`. The first four examples in the code are those most commonly encountered. The file is disabled by default with `specialchar.num=0`. Edit this number to reflect the actual number of special characters being mapped/replaced, for example: `specialchar.num=5`. Expand the code to include additional characters (for example “,” “!”) that are used within the table names and user names of the Oracle database schema. Note: To read this file you must restart the Impact Server and the GUI Server to ensure that all components are restarted and their configuration files are reread.

---

### Using special characters in OSLC and UI data provider policies

You cannot use special characters like the comma (,) and ampersand (&) characters in policies that provide data to the OSLC provider or the UI data provider because these characters are reserved.

Special characters like the comma and ampersand characters are reserved as special characters. You cannot use these characters in policies that provide data to the OSLC provider or the UI data provider. To display a different field name, use the `AS` keyword to replace the reserved characters.

#### Example

For example, add the following statement to a policy:

```
SELECT "My&Test" AS My_Test FROM test_table
```

The policy returns the field name `My_Test` instead of `My&Test`.

---

### Using special characters in column names

In certain specific circumstances, special characters in column names can create a problem for Netcool/Impact. To correct this problem, you add the special character to the list of allowed special characters.

#### About this task

Using special characters in column names can create a problem for the SQL queries that are used by Netcool/Impact. Netcool/Impact, in most cases, surrounds the column that contains the special characters with double quotation marks to avoid this issue. However, if the particular character is not listed in the `impact.server.columns.reservedchars` property in the `NCI_server.props` configuration file, you must add it.

#### Procedure

1. To allow the handling of a special character in a column name, add the following statement to the `NCI_server.props` configuration file:

```
impact.server.columns.reservedchars=<specialcharacters>
```

where `<specialcharacters>` are the characters that you want to add. For example, you can add `"[]=;&@,$%*<>,-:;!$%~$u+#./\\' () {} ^` here.

2. Restart the Impact Server.

#### Example

The following example demonstrates how to add a list of special characters:

```
impact.server.columns.reservedchars = "[]=;&@,$%*<>,-:;!$%~$u+#./\\' () {} ^
```

---

### Using special characters in column names output by the DirectSQL function

Column names that are output by the `DirectSQL` function might contain special characters. This issue can create a problem for the SQL queries that are used by Netcool/Impact.

#### Procedure

If you use the `DirectSQL` function in a policy to retrieve column names that contain special characters, add a statement to the policy that changes the column name to a value that does not contain any special characters.

#### Example

For example, add the following query to a policy that contains the `DirectSQL` function:

```
DataSource = "MYSQL_01";
Query = "select ID, _SPECIAL^CASE as SPECIALCASE from table";
CountOnly = False;
DataItems = DirectSQL(DataSource, Query, CountOnly);
```

The query replaces the special characters with the new value.

---

### Handling events which contain { character(s)

If the Key Field for an event contains a { character, then the following procedure is required, to enable `ReturnEvent(EventContainer)` to run successfully from an Impact policy.

This is required because the JDBC driver considers anything that has '{' at the beginning to be a function call, and so tries to parse it and is unable to do so, because it is an invalid function.

#### Procedure

Create, or edit, a file called `<servername>.com.sybase.jdbc3.jdbc.SybDriver.props` in the `SIMPACT_HOME/etc` directory, where `<servername>` should be replaced by the server name of the Impact Server. By default, this is `NCI`, i.e. `NCI_com.sybase.jdbc3.jdbc.SybDriver.props`

Add the following property to the file:

```
ESCAPE_PROCESSING_DEFAULT=false
```

Note: this change requires a server restart.

Note: this is required on all servers in a cluster.

## Clustering and synchronization issues

### Secondary member does not take over when Primary has OutOfMemoryError

#### Symptom

When a java process detects an OutOfMemoryError the process does not terminate. The default action is to dump java core, Snap and heap dump (phd) files.

This can cause issues as the process continues to run, in a indeterminate state. In the case of a cluster, the secondary memory cannot properly detect that the primary is not working.

#### Cause

This is because of standard JVM handling for OutOfMemory. The java process will continue to run in a spurious state.

#### Resolution

To avoid this, a script can be run when the JVM detects an OOM. This script can perform any action i.e. it could be used to send an alert, or it could kill the failing process, thus enabling the other cluster members to take over cleanly.

To call a script on detection of an OutOfMemoryError, add the following to the jvm.options file for the server.

```
-Xdump:tool:events=throw,filter=*OutOfMemoryError,exec=<full path to script>
```

**Note:** Adding the above line does not override the default action of dumping the java core, Snap and heap dump (phd) files. The script is run after the default sump action. However, depending on the system resources, the dump action can take a long time. If this is not required, then include the following in the jvm.options:

```
-Xdump:heap:none
```

i.e.

```
-Xdump:heap:none
```

```
-Xdump:tool:events=throw,filter=*OutOfMemoryError,exec=/opt/IBM/tivoli/impact/bin/killImpactServer.sh
```

where /opt/IBM/tivoli/impact/bin/killImpactServer.sh has the code below. This is just a sample file with the output redirected to a temp file called /tmp/g

```
echo >> /tmp/g
echo ***** >> /tmp/g
echo Handling OOM on Backend Server >> /tmp/g
date >> /tmp/g
echo >> /tmp/g
echo Killing Process $PPID >> /tmp/g
kill $PPID >> /tmp/g
sleep 10
kill -9 $PPID >> /tmp/g
date >> /tmp/g
echo ***** >> /tmp/g
```

This kills the process as soon as an OutOfMemory condition occurs. **Note:** the script first tried to kill the process cleanly. After 10 second it runs kill -9. This will terminate the process immediately without giving the process the chance to cleanup.

Sample output in /tmp/g

```
-----
Handling OOM on Backend Server
Thu Aug 15 00:06:41 PDT 2019

Killing Process 5213
Thu Aug 15 00:06:46 PDT 2019
-----
```

### Cluster Fail-over fails in IPv6 environment

#### Symptom

Secondary Impact server fails to pick up primary role when Impact primary server goes down.

#### Cause

The self index number in nameserver web.xml file is wrong .

#### Resolution

Use the following steps to correct the the self index number web.xml

1. On the system where secondary Impact server is installed, navigate to directory IMPACT\_HOME/wlp/usr/servers/<instance name>/apps/nameserver.war/WEB-INF where the instance name is your server instance name (example NCI).
2. Use a text editor, open file web.xml

3. Find the following lines below

```
<param-name>SELFINDEX</param-name>
<param-value>0</param-value>
```

4. Change the value from 0 to 1 and save.
5. Navigate to directory `IMPACT_HOME/install`.
6. Use a text editor, open file `buildimpact.properties`.
7. Find the line `nameServerSelfIndex=0`.
8. Change the value from 0 to 1 and save.
9. Close the editor.
10. Restart secondary Impact server.

---

## Error messages display when you access MWM in a cluster setup

### Problem

In the Maintenance Window Management UI, the following message is displayed.

Error. The SoapORBCClient operation failed. Please check the server log.

The `impactserver.log` shows the following errors.

```
ERROR [SoapManagerFacadeImpl] Could not run policy Opview_onetwins
com.micromuse.response.common.PolicyProcessingException: null in Opview_onetwins..
```

### Resolution

In the MWM project, update the MWM policies, by replacing the `getClusterName()` function calls with their actual cluster name as a string.

For example: Replace `getClusterName()` with `NCICLUSTER` where `NCICLUSTER` is the cluster name.

The following policies must be updated:

- `Opview_onetwins`
- `Opview_openwins`
- `Opview_rdomwins`
- `Opview_rdownwins`
- `Opview_rdownwin`

---

## Data source replication fails

How to resolve data source replication for `EventRulesDB`, `SCR_DB`, and `EIC_alertsdb` data sources.

### Symptom

In a clustered environment, replication of the `EventRulesDB`, `SCR_DB`, and `EIC_alertsdb` data sources fails. The errors appear in the `impactserver.log` of the primary server.

### Cause

Encrypted password cannot be transmitted from the primary server to the secondary server. The installation program does not ask for passwords for the following data sources:

- `EventRulesDB`
- `SCR_DB`
- `EIC_alertsdb`

### Resolution

Edit the data sources in the UI and provide a value for the password field. If you are not planning to use these data sources, you can set the password field to be empty or any value and save these data sources.

---

## XML Wizard created data types not working on other cluster members

After running the XML Wizard, the XML data types created by the primary cluster member can be found on the other cluster members.

### Symptom

XML data types appear on the other cluster member. However, they do not work with the policies, whenever any of the non-primary cluster members becomes the primary member.

### Resolution

After using the XML Wizard to create the XML data types, you must manually update all of the other cluster members in either of the following configuration files:

- `$IMPACT_HOME/dsa/XmlDsa/XmlHttpTypes`
- `$IMPACT_HOME/dsa/XmlDsa/XmlFileTypes`

This can be done by manually copying the `XmlHttpTypes` and `XmlFileTypes` configuration files from the primary server (or from the location where the wizard was run) and replacing them with the files in the `$IMPACT_HOME/dsa/XmlDsa/` directory of the other cluster members.

The data sources and data types are overwritten but the `XmlHttpTypes` and `XmlFileTypes` configuration files are not.

Only Policies, Data Sources, Data Types, and Services are replicated between cluster members.

---

## jslib directory not exported by nci\_export

If you have defined a project and wish to export it with the `nci_export` utility, it does not export the related contents of the `jslib` directory.

However, the `jslib` directory is backed up even when the project uses no resources from there.

### Cause

The `jslib` directory is not exported by design in `Netcool/Impact`.

### Resolution

Manually copy the files from the `jslib` directory to the different servers.

---

### Operator view synchronization in a cluster configuration

Operator view does not display correctly on the secondary sever while open for editing on the primary sever.

An operator view is open for editing on a primary server. The secondary server has been offline and comes back online and completes synchronization. The operator view shows in the secondary server user interface.

#### Symptoms

If a user selects the operator view and clicks View in the secondary server user interface the following error message displays:

```
Error message: impact.opview.display.errmsg.nofile not found in:
ncimsgs.propsNCICLUSTER-myOpview.html
```

#### Resolution

If you have multiple GUI Servers running for load balancing in high availability mode then you will face this issue.

Copy the .html file from \$IMPACT\_HOME/impact/opview/ in the GUI Server to the same directory in the other GUI Servers. If a user selects the operator view and clicks View in the secondary server user interface the operator view displays correctly.

In an instance where you have a split installation of the GUI Server and the Impact Server on different machines, you must copy the files from \$IMPACT\_HOME/opview/displays and \$IMPACT\_HOME/opview/assets to your directory.

### Server cluster cannot synchronize if there is a large .type file

#### Symptoms

A very large .type file is not synchronizing in a clustered environment.

#### Resolution

Set the following property in the \$IMPACT\_HOME/etc/<SERVER\_NAME>\_server.props file:

```
impact.cluster.readlimit=<number>
```

Where <number> can be 8192, 16384, 32768 and so on; the default value is 16384 if not specified.

After you add this parameter, or change its value, you should restart the server so that it picks up the configuration change.

Note: Use this parameter only if a large .type file is not synchronizing in a clustered environment.

### Impact Cluster member will not start if Derby port is in used

#### Symptom

Impact Derby database fails to start if the derby port is in use. The following message will be seen in the impactserver.log file

```
Could not listen on port <Derby Port> on host <Impact Host Name>:
java.net.BindException: Address already in use (Bind failed)
An exception was thrown during network server startup. DRDA_ListenPort.S:Could not listen on port <Derby Port> on host <Impact Host Name>:
java.net.BindException: Address already in use (Bind failed)
```

By default, the derby listening port is 1527.

#### Cause

Impact has a ImpactDatabase Service which starts Derby. When this service is set to auto-start, Derby is automatically started when the Cluster member starts up. On startup Derby listens on a port. If the port is in use by a different process, then Derby cannot start successfully.

#### Resolution

1) Stop whatever process is using the Derby port to make it free.

or

2) Switch Derby to use a different port by changing the appropriate entry in the impact/etc/ImpactDB.ds file :

```
ImpactDB.Derby.PRIMARYPORT=1527
```

```
ImpactDB.Derby.BACKUPPORT=1527
```

### Impact Clustering in slow network environments

#### Symptom

Clustering does not appear to work when there is a slow connection between Impact cluster members.

#### Cause

On startup, it takes time for the second cluster member to copy data from the primary Server.

#### Resolution

Monitor the impactserver.log file on both the Primary and Secondary to make sure the Primary is fully up before starting the Secondary. Then make sure the Secondary is fully synchronised before stopping the Primary.

For example, in a cluster with 2 members, NCIP (Primary) and NCIS (Secondary), wait for the following message on the Primary before starting the Secondary.

```
INFO [ClusterMember] NCIP is now acting as primary cluster member
INFO [ImpactServerLibertyBean] Impact_instance_started_successfully
INFO [ImpactServerLibertyBean] Impact instance [NCIP] started successfully
```

Then when starting the Secondary, you will see many messages of files being synced over, i.e. policies, services, data types etc. And finally the ImpactDB derby database. These are sample messages seen:

```
INFO [ClusterMember] Retrieving policy MWM
INFO [ClusterMember] Retrieving policy MWM_AddlTWin
INFO [ClusterMember] Retrieving policy MWM_AddRWin
...
INFO [ClusterMember] Retrieving type configuration info for TimeRangeGroup
INFO [ClusterMember] Retrieving type configuration info for Doc
INFO [ClusterMember] Retrieving type configuration info for Filter
...
INFO [ClusterMember] copyImpactDB from primary http://localhost:9080/db/ReplicationServlet?code=-370919454&impactDB=ImpactDB.zip to /opt/IBM/tivoli/impact/db/NCIP/derby/ImpactDB.zip
```

To know when the Secondary is fully up and acting as a secondary, look for these messages on the secondary server's impactserver.log file.

```
INFO [ClusterMember] convertRoleToSecondary: _primaryName: NCIP
INFO [ClusterMember] About to add cluster member NCIS
INFO [ClusterMember] Added as a cluster member: NCIS. Primary is: NCIP
...
INFO [ClusterMember] convertRoleToSecondary done.
INFO [ClusterMember] NCIS is now acting as Secondary cluster member.
INFO [ImpactServerLibertyBean] Impact_instance_started_successfully
INFO [ImpactServerLibertyBean] Impact instance [NCIP] started successfully
```

If the Primary is stopped, the Secondary will take over. To know when the take over is complete look for this message:

```
INFO [ClusterMember] Locking to become primary
INFO [ClusterMember] Starting to assume the primary role
INFO [ClusterMember] NCIS is now acting as primary cluster member
```

If the preferred Primary is then restarted, it will take back over as the Primary and the following will be seen in the impactserver.log file of the Primary.

```
INFO [ImpactServerLibertyBean] Impact_instance_started_successfully
INFO [ImpactServerLibertyBean] Impact instance [NCIP] started successfully
INFO [ClusterMember] Preferred primary now attempting to start in primary mode
INFO [ClusterMember] Attempt to convert to primary mode since the server is the preferred Primary
```

Note: the GUI server should automatically switch to the acting Primary server. The browser should reflect that. Sometimes it is necessary to clear the browser cache.

---

## Performance and synchronization issues

The following issue has been reported recently from Impact customers on FP12 and FP13 :

In cluster environment some customer see a failure of replication of artefacts from PRIMARY cluster member to SECONDARY cluster member. Also, in cluster and non-cluster environment some customers see error messages in Impact sever log files, without any functional failure.

### Symptom

The symptoms are intermittent, and customers may see:

- 1 Slowness when processing events.
- 2 Events are being processed solely on PRIMARY cluster member.
- 3 Artifacts created on PRIMARY cluster are not replicated to SECONDARY cluster member. E.g. a policy or a datasource created on PRIMARY server doesn't appears on SECONDARY cluster member , in case of failover.
- 4 Exceptions and ERRORS in Impact sever log files. Here are two examples  
*05 Jun 2018 08:37:44,504 ERROR [PublisherProxy] Unable to register a proxy instance for 'ObjectHolderORBPublisher-43807' in the Executor; this is most likely attributed to the fact that the Executor may be in the midst of a shutdown.*  
**java.util.concurrent.RejectedExecutionException: Task com.micromuse.common.util.concurrent.TrackingExecutor\$1@de1dae3b rejected from java.util.concurrent.ThreadPoolExecutor@627db6ae[Shutting down, pool size = 12, active threads = 12, queued tasks = 0, completed tasks = 116]**  
*at java.util.concurrent.ThreadPoolExecutor\$AbortPolicy.rejectedExecution(ThreadPoolExecutor:java:2081)*  
*at java.util.concurrent.ThreadPoolExecutor.reject(ThreadPoolExecutor:java:840)*  
*at java.util.concurrent.ThreadPoolExecutor.execute(ThreadPoolExecutor:java:1394)*  
*at com.micromuse.common.util.concurrent.TrackingExecutor.execute(TrackingExecutor:java:101)*  
*at com.micromuse.common.util.concurrent.ThreadManager.execute(ThreadManager:java:103)*  
*at com.micromuse.response.common.PublisherProxy.invoke(PublisherProxy:java:95)*  
*at com.sun.proxy.\$Proxy61.notifySubscribers(Unknown Source)*  
*at com.micromuse.response.broker.cluster.ClusterMember.notifyConfigUpdates(ClusterMember:java:981)*  
*at com.micromuse.response.server.Facade.applyUpdate(Facade:java:353)*  
*at com.micromuse.response.broker.cluster.ClusterMember\$3.update(ClusterMember:java:2254)*  
*at com.micromuse.common.util.BasicPublisher.notifySubscribersExcept(BasicPublisher:java:75)*  
*at com.micromuse.common.util.BasicPublisher.notifySubscribers(BasicPublisher:java:104)*

```

at com.micromuse.response.server.Service.notifyServiceStateSubscribers(Service.java:486)
at com.micromuse.response.service.AbstractEventReader.newServiceStateAvailable(AbstractEventReader.java:772)
at com.micromuse.response.broker.EventBroker.persistToFile(EventBroker.java:391)
at com.micromuse.response.service.AbstractEventReader.checkPoint(AbstractEventReader.java:905)
at com.micromuse.response.broker.cluster.RoundRobinEventQueueManager.checkPoint(RoundRobinEventQueueManager.java:594)
at sun.reflect.GeneratedMethodAccessor129.invoke(Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at sun.rmi.server.UnicastServerRef.dispatch(UnicastServerRef.java:378)
at sun.rmi.transport.Transport$2.run(Transport.java:215)
at sun.rmi.transport.Transport$2.run(Transport.java:212)
at java.security.AccessController.doPrivileged(AccessController.java:492)
at sun.rmi.transport.Transport.serviceCall(Transport.java:211)
at sun.rmi.transport.tcp.TCPTransport.handleMessages(TCPTransport.java:580)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.run0(TCPTransport.java:841)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.access$400(TCPTransport.java:632)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler$1.run(TCPTransport.java:697)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler$1.run(TCPTransport.java:694)
at java.security.AccessController.doPrivileged(AccessController.java:426)
at sun.rmi.transport.tcp.TCPTransport$ConnectionHandler.run(TCPTransport.java:694)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1164)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:634)
at java.lang.Thread.run(Thread.java:798)

```

And

03 Jun 2018 19:31:34,666 ERROR [ORBPublisherImpl] Unexpected exception in subscriber; removing...

```

java.lang.ThreadDeath
at java.lang.Thread.stop(Thread.java:988)
at com.micromuse.response.server.Rooster.stopRunning(Rooster.java:239)
at com.micromuse.response.broker.cluster.ClusterMember.stopRunning(ClusterMember.java:1375)
at com.micromuse.response.broker.cluster.ClusterMember.shutdownClusterMember(ClusterMember.java:791)
at com.micromuse.response.server.Server.stop(Server.java:433)
at com.micromuse.response.server.management.ManagedImpactServerSupport.stop(ManagedImpactServerSupport.java:237)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:95)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at com.micromuse.response.server.management.ImpactServerLibertyBean.invoke(ImpactServerLibertyBean.java:305)
at com.sun.jmx.interceptor.DefaultMBeanServerInterceptor.invoke(DefaultMBeanServerInterceptor.java:832)
at com.sun.jmx.mbeanserver.JmxMBeanServer.invoke(JmxMBeanServer.java:814)
at com.ibm.ws.kernel.boot.jmx.service.MBeanServerForwarderDelegate.invoke(MBeanServerForwarderDelegate.java:196)
at com.ibm.ws.jmx.internal.DelayedMBeanActivator.invoke(DelayedMBeanActivator.java:547)
at com.ibm.ws.kernel.boot.jmx.internal.PlatformMBeanServer.invoke(PlatformMBeanServer.java:372)
at com.micromuse.response.server.ImpactStartupBean.stop(ImpactStartupBean.java:275)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:95)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
at java.lang.reflect.Method.invoke(Method.java:620)
at com.ibm.ejs.container.interceptors.InterceptorProxy.invokeInterceptor(InterceptorProxy.java:205)
at com.ibm.ejs.container.interceptors.InvocationContextImpl.proceed(InvocationContextImpl.java:642)
at com.ibm.ejs.container.interceptors.InvocationContextImpl.doLifecycle(InvocationContextImpl.java:335)
at com.ibm.ejs.container.SingletonBeanO.callTransactionalLifecycleInterceptors(SingletonBeanO.java:236)
at com.ibm.ejs.container.SingletonBeanO.destroy(SingletonBeanO.java:889)
at com.ibm.ejs.container.EJSHome.destroy(EJSHome.java:658)
at com.ibm.ejs.csi.EJBApplicationMetaData.beginStopping(EJBApplicationMetaData.java:1171)
at com.ibm.ejs.csi.EJBApplicationMetaData.stopping(EJBApplicationMetaData.java:1229)
at com.ibm.ws.ejbcontainer.osgi.internal.EJBRuntimeImpl.applicationStopping(EJBRuntimeImpl.java:1626)
at com.ibm.ws.container.service.state.internal.ApplicationStateManager.fireStopping(ApplicationStateManager.java:58)
at com.ibm.ws.container.service.state.internal.StateChangeServiceImpl.fireApplicationStopping(StateChangeServiceImpl.java:60)
at com.ibm.ws.app.manager.module.internal.SimpleDeployedAppInfoBase.uninstallApp(SimpleDeployedAppInfoBase.java:472)
at com.ibm.ws.app.manager.ear.internal.EARApplicationHandlerImpl.uninstall(EARApplicationHandlerImpl.java:97)
at com.ibm.ws.app.manager.internal.statemachine.StopAction.execute(StopAction.java:83)
at com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.enterState(ApplicationStateMachineImpl.java:1283)
at com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.performAction(ApplicationStateMachineImpl.java:1126)
at com.ibm.ws.app.manager.internal.statemachine.ApplicationStateMachineImpl.run(ApplicationStateMachineImpl.java:881)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1164)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:634)
at java.lang.Thread.run(Thread.java:798)

```

## Cause

We have identified an issue with an Impact build-in function ActivateAndReturn. There, the Thread Manager while managing the threads executing the function code, prematurely shuts itself down. This shuts down other threads carrying out different tasks in Impact. And this precipitates the symptoms described above.

## Resolution

We provide code fix with `nci.jar` replacement for FP12 and FP13 deployed products. Also, the same fix will be delivered in next FP release.

The fix is available to download until 21 September 2018 from ( date will be extended if needed ) :

```

ftp ftp.ecurep.ibm.com
user anonymous
password <email address>
cd /fromibm/dwG6SKDz5lZxm3E54nAc7WnZO4u3VCOfl1jHN6IUq74
bin
get nci_FP12_IJ07083.jar

ftp ftp.ecurep.ibm.com
user anonymous
password <email address>
cd /fromibm/7urFfyL4VzueUrSK4sg0W2mmL8anTDA6Elf8DqybK8
bin
get nci_FP13_IJ07083.jar

```

Steps to apply the `nci_FP13_IJ07083.jar` to FP13 environment

1. stop Impact server
2. make a backup copy of current nci.jar file  
*cp \$IMPACT\_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar to \$IMPACT\_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar.ORI*
3. copy **nci\_FP13\_IJ07083.jar** to *\$IMPACT\_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar*
4. start Impact server

## A POLICY ACTIVATOR SERVICE MAY NOT START AUTOMATICALLY ON FAIL-BACK

### Symptom

On a cluster install on failback to primary, a policy activator service may not get started on the primary.

### Cause

The activation interval of a policy is not observed across nodes in a cluster install. If a primary cluster member executes a policy with an activation interval of 60 minutes, then if failover occurs, then the policy will get executed straight away on the secondary. If a policy is performing extensive updates and not finishing during the failback period, this causes the service not to shut down.

### Resolution

A fix released in 7.1 FP15 enables activation intervals to be observed across cluster nodes. A configurable property in the policy activator service will denote if the last execution time for a policy should be set. The last execution time of the policy will be updated when the policy executes. The last execution time will replicate to the secondary cluster member(s). Before the policy is executed on Failover/Failback, the policy activator service will check if the last execution time is greater than the current time less the activation interval, then skip the execution of the policy this time around.

To ensure that the activation interval of a policy executed by a policy activator is observed across nodes in a cluster install

On the primary, for policy activator service e.g: myActivatorService

```
//ensure that the activator service is not locked in the GUI, check for a visible lock symbol.
Add the following 2 properties to the properties file for the service: NCI1_myActivatorservice.props
impact.myactivatorservice.checkpolicylastexecution=true
impact.myactivatorservice.policylastexecution=
```

stop the cluster  
start the primary, allow to start, then start the secondary

## Derby Upgrade Issues

### Resetting Impact Derby DB

=====

If your ImpactDB gets corrupted for some reason, or you want to start with a fresh Derby DB, then follow the steps outlined below:

First, make sure to backup your original DB!

0. Shutdown the cluster (all Impact servers in the cluster). The following steps can be just done on the primary Impact server, then the replication will apply the updated DB to the secondary server.

1. Find the appropriate DB for your Impact version (either NOI install or core), in \$IMPACT\_HOME/install/dbcore directory. (For example, ImpactDB.zip/ImpactDB\_10.14.zip is for non-NOI core installs, and ImpactDB\_NOI\_FP15.zip for NOI installs starting with FP15, etc). (Prior to FP14/FP15 for core install, used ImpactDB\_10.8.zip).
2. Go to directory where your original DB is \$IMPACT\_HOME/db/<ServerName>/derby. Backup ImpactDB directory.
3. Copy the zip file from Step 1.
4. Unzip the file, and make sure original DB directory structure is the same as before.
5. Start the cluster (one by one).

### Derby Upgrade

=====

FP14 upgrades Derby JARs, and upgrades Impact Database management runtime, but performs a Soft Upgrade of the actual Derby DB, from version 10.8 to 10.14.

FP15 performs a Full Upgrade of Derby DB. A full upgrade is a complete upgrade of the Derby database. After FP15 successfully installs the Full version can be checked by connecting to the database with the command-line client.

### How to check the upgraded derby version

=====

FP14 performs a Soft Upgrade of Derby, from version 10.8 to 10.14.

FP15 performs a Full Upgrade of Derby. A full upgrade is a complete upgrade of the Derby database. After FP15 successfully installs the Full version can be checked by connecting to the database with the command-line client.

```
$IMPACT_HOME/bin/nci_db connect
```

Specify the URL to connect to the database at the prompt. Replace HOSTNAME with the actual hostname. The default password is used below. Adjust as appropriate. For example:

```
ij > connect 'jdbc:derby://HOSTNAME:1527/ImpactDB;user=impact;password=derbypass';
```

Run the following command, at the prompt:

```
values syscs_util.syscs_get_database_property('DataDictionaryVersion');
```

The example below shows the expected output: 10.14.

```
ij> values syscs_util.syscs_get_database_property('DataDictionaryVersion');
1
```

```
-----
10.14
1 row selected
```

If the version returned is lower than 10.14, then it is advisable to manually upgrade the database; It is required in an Cluster environment.

**The Derby DB should be automatically upgraded during FP15. Look for the following in the InstallationManager/logs/native logs to indicate a successful upgrade.**

-update-derby-connection-info:

```
[copy] Copying 1 file to /opt/IBM/tivoli/impact/install/dbcore
[copy] Copying /opt/IBM/tivoli/impact/install/dbcore/CheckImpactDBVersion.sql to /opt/IBM/tivoli/impact/install/dbcore/7.1.0.15_CheckImpactDBVersion.sql
[echo] Performing Derby DB upgrade on PRIMARY Derby DB
[echo] Performing Derby DB version status check
[echo] Start the Derby DB
[echo] Query Derby DB for version level
[echo] Stopping the Derby DB
[echo] sanitizing the CheckImpactDBVersion.sql and out files
[echo] Successful upgrade of Derby!!!
```

Also the following file, created by the FP Installer, can be checked: impact/logs/install/CheckImpactDBVersion.out

The contents should look something like this:

Using /home/fyre/opt/IBM/tivoli/impact/install/configuration/./install/dbcore/7.1.0.15\_CheckImpactDBVersion.sql as SQL source file for the Database.

```
ij version 10.14
ij> .. ***** {COPYRIGHT-TOP-RM} ***
--* Licensed Materials - Property of IBM
--* "Restricted Materials of IBM"
--* 5724-S43
--*
--* (C) Copyright IBM Corporation 2018. All Rights Reserved.
--*
--* US Government Users Restricted Rights - Use, duplication, or
--* disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
-- ***** {COPYRIGHT-END-RM} ***

-- This SQL file will check the version of ImpactDB Derby Database.

-- Connect to ImpactDB and perform a full upgrade of Derby Database:
connect 'jdbc:derby://empery1.fyre.ibm.com:1527/ImpactDB;user=impact;password=__DBPASSWORD__';
ij> -- Verify that Derby Database has an upgraded version
values syscs_util.syscs_get_database_property('DataDictionaryVersion');
1
-----
10.14

1 row selected
ij>
```

*Derby Database upgrade successful!!!*

If the installer was successful in upgrading Derby, it would have the 10.14 version, as well as the message "Derby Database upgrade successful"

#### How to manually run a Full upgrade of derby (FP15)

The following steps can be run against a FP15 Derby database.

1. Ensure the IMPACT\_HOME is set correctly, i.e.

```
export IMPACT_HOME = /opt/IBM/tivoli/impact
```

2. Stop all Impact cluster members, including the Primary.

3. Run the following command, replacing NCI with the correct value for Impact Server name and **impact/derbypass** with the correct derby user/password:

```
$IMPACT_HOME/sdk/bin/java -classpath $IMPACT_HOME/wlp/usr/servers/NCI/apps/NCI.ear/nci.jar:$IMPACT_HOME/lib3p/derby.jar:$IMPACT_HOME/lib3p/derbyclient.jar:$IMPACT_HOME/lib3p/derbyrun.jar:$IMPACT_HOME/lib3p/derbytools.jar -Dderby.system.home=$IMPACT_HOME/db/NCI/derby -Dderby.user=impact -Dderby.password=derbypass com.micromuse.response.service.ImpactDatabaseUpgrade
```

**Note:** it is expected to see this message: *Exception in thread "main" java.sql.SQLException: Database 'ImpactDB' shutdown.*

4. To check the version, run the command mentioned above, using nci\_db.

5. Start all Impact cluster members, starting the Primary server first.

#### How to manually run a Full upgrade of derby (FP14)

The following steps can be run against a FP14 Derby database.

1. Ensure the IMPACT\_HOME is set correctly, i.e.

```
export IMPACT_HOME = /opt/IBM/tivoli/impact
```

2. Stop all Impact cluster members, including the Primary.

3. Navigate via the command line to the derby directory for the Primary Impact server, i.e.

```
cd $IMPACT_HOME/db/NCI/derby
```

4. From this directory, start the Apache Derby Network Server with the following command. Replace HOSTNAME with the actual hostname. The default password is used below. Adjust as appropriate.

```
$IMPACT_HOME/sdk/bin/java -jar $IMPACT_HOME/lib3p/derbyrun.jar server start -h HOSTNAME -p 1527 -user impact -password derbypass &
```

5. Connect to the database with the command-line client.

```
$IMPACT_HOME/bin/nci_db connect
```

6. Specify the URL to connect to the database at the prompt, including **upgrade=true**. Replace HOSTNAME with the actual hostname. The default password is used below. Adjust as appropriate. For example:

```
ij> connect 'jdbc:derby://HOSTNAME:1527/ImpactDB;user=impact;password=derbypass;upgrade=true';
```

7. To check the version, run the following command, at the prompt:

```
values syscs_util.syscs_get_database_property( 'DataDictionaryVersion' );
```

The example below shows the expected output:

```
ij> values syscs_util.syscs_get_database_property( 'DataDictionaryVersion' );
```

```
1
```

```
-----
10.14
```

```
1 row selected
```

8. From the derby directory, stop the Apache Derby Network Server with the following command. Replace HOSTNAME with the actual hostname. The default password is used below. Adjust as appropriate.

```
$IMPACT_HOME/sdk/bin/java -jar $IMPACT_HOME/lib3p/derbyrun.jar server shutdown -h HOSTNAME -p 1527 -user impact -password derbypass &
```

9. Start all Impact cluster members, starting the Primary server first.

## General issues

### Errors in impact logs for Data Type

#### Symptom

Errors seen in Impact GUI Log and Impact Back end server log:

**impactgui.log** - example below:

```
ERROR [ImpactServerNavModel] Failed to determine if type is configured for UI : <DATA TYPE NAME>
java.lang.Exception: Error 400: null
```

```
at com.micromuse.response.client.restui.RestCallUtil.makeRestCall(RestCallUtil.java:161)
at com.micromuse.response.client.restui.RestCallUtil.makeRestCall(RestCallUtil.java:80)
at com.micromuse.response.client.restui.RestCallFunctions.getSoapTypeMemento(RestCallFunctions.java:132)
at com.micromuse.response.client.soapclient.restprovider.CURIDataRetrieverFromSOAPClient.getSoapTypeMemento(CURIDataRetrieverFromSOAPClient.java:253)
at com.micromuse.common.restprovider.ImpactServerNavModel.isDataTypeConfiguredForUI(ImpactServerNavModel.java:1868)
at com.micromuse.common.restprovider.ImpactServerNavModel.initializeDataSourceIdentifiers(ImpactServerNavModel.java:262)
at com.micromuse.common.restprovider.ImpactCURITimerTask.initializeDataSetIds(ImpactCURITimerTask.java:92)
at com.micromuse.common.restprovider.ImpactCURITimerTask.run(ImpactCURITimerTask.java:73)
at java.util.TimerThread.mainLoop(Timer.java:567)
at java.util.TimerThread.run(Timer.java:517)
ERROR [RestCallUtil] Error 400: null
```

**impactserver.log** - example below:

```
ERROR [DataModelUIResource] null
java.lang.NumberFormatException: null
at java.lang.Integer.parseInt(Integer.java:466)
at java.lang.Integer.parseInt(Integer.java:539)
at com.micromuse.response.server.TypeConfigFileAttributeManager.getIntAttribute(TypeConfigFileAttributeManager.java:90)
at com.micromuse.response.dblayer.TypeCustomization.getIntAttribute(TypeCustomization.java:728)
at com.micromuse.response.dblayer.DynamicOrgNodeBagCustomization.getDataSourceNum(DynamicOrgNodeBagCustomization.java:144)
at com.micromuse.response.dblayer.DynamicOrgNodeBagCustomization.getDataSourceName(DynamicOrgNodeBagCustomization.java:136)
at com.micromuse.response.dblayer.DynamicOrgNodeBagCustomization.getSoapMemento(DynamicOrgNodeBagCustomization.java:103)
at com.micromuse.response.dblayer.SQLOrgNodeBagCustomization.getSoapMemento(SQLOrgNodeBagCustomization.java:109)
at com.micromuse.response.dblayer.Type.getSoapMemento(Type.java:268)
at com.micromuse.response.server.Facade.getSoapTypeMemento(Facade.java:1452)
at com.micromuse.response.server.restui.DataModelUIResource.getSoapMemento(DataModelUIResource.java:2779)
at sun.reflect.GeneratedMethodAccessor79.invoke(Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:56)
```

#### Cause

SQL Data Types type files are missing a DATASOURCENUM. i.e.

```
<TYPE NAME>.SQL.DATASOURCENUM=x
```

**Resolution**

Edit the affected Data Types via the GUI and click Save.

Via the command line check the related .type file in the impact/etc directory.

Verify that the file contains a valid DATASOURCENUM

```
<TYPE NAME>.SQL.DATASOURCENUM=x
```

where x exists in the impact/etc/<SERVER>\_datasourcelist file.

```
grep number=x impact/etc/<SERVER>_datasourcelist
```

---

**Unable to run certain scripts on Solaris 10 the whoami command is not in the PATH environment**

Applies to Netcool/Impact 7.1.0.1.

**Symptom**

On Solaris, when you run a command in \$IMPACT\_HOME/bin or \$IMPACT\_HOME/install/security the following error is displayed.

```
You must log in as user.....
```

**Cause**

The whoami command is not in the PATH environment.

**Resolution**

On Solaris, the command whoami exists in either /usr/bin or /usr/ucb or both directories. Set either /usr/bin or /usr/ucb in the PATH environment.

---

**Input field not displayed in Internet Explorer browser**

The input field for the Character limit for Syntax Highlighting option in Preferences is not visible or partially obscured.

**Symptom**

The input field for the Character limit for Syntax Highlighting option in Preferences might be obscured or difficult to access when you use Internet Explorer, with the text size set to Larger or Largest.

**Cause**

The Preferences dialog does not correctly calculate its dialog height for larger font sizes in Internet Explorer.

**Resolution**

Set the text size to medium or smaller in Internet Explorer, update the Character limit option and save the changes. Afterward, you can set the text size back to its previous size.

---

**Use of data types with large table model support and charting at the same time****Symptom**

When large table model support is enabled for a data source, the charting widgets (bar, line, column) are unable to populate the data from data types. However, the table widget is able to retrieve the data correctly.

**Cause**

Large table model support is enabled by default for many data sources.

**Resolution**

Complete one of the following steps.

- In the Charting widget, within Settings > Items per page, enter a value but not All.
  - Disable large table model support by adding the line `impact.uidataproducer.largetablemodel=false` in the `server.props` file, restart the GUI server, and create the chart.
- 

**Collecting log files for debugging**

Use the following information to collect policy logs to use to debug issues.

Complete the following steps to collect log files from Netcool/Impact.

1. Execute the `nci_collect_logs` command from the `impact/bin` directory.
2. If you want to exclude the policy and etc files as part of the debug process, execute the command with the following parameter: `-DexcludePolicyEtcFiles=true`

For example: `nci_collect_logs -DexcludePolicyEtcFiles=true`

The logs are created as a zip file in the \$IMPACT\_HOME directory. The filename has the format `impact_logs_<DATEANDTIME>.zip`

3. If you want the logs to be created in a different directory than the \$IMPACT\_HOME directory, execute the command with the following parameter: `-Dlogfilelocation=/differentdirectory`

For example: `nci_collect_logs -Dlogfilelocation=/tmp`

(\* 3 is available in 611 FP4 onwards and 7.1 FP13 onwards)

If you are submitting any problems to IBM Software Support, it can be useful to submit log file information, or it can be requested by IBM Software Support, see [https://www-947.ibm.com/support/entry/myportal/Overview/Software/Tivoli/Tivoli\\_Netcool-Impact](https://www-947.ibm.com/support/entry/myportal/Overview/Software/Tivoli/Tivoli_Netcool-Impact).

---

### Project Deployment fails to promote a project in Netcool/Impact 7.1

**Problem:** When project contains default data sources such as: Statistics, Internal, Schedule, or URL; It fails to deploy to the target cluster.

**Solution:** Remove these default data sources from the project, and run deployment again.

---

### How to clear disk space when reporting is enabled

How to check disk space when reporting is enabled. How to set up the report policy REPORT\_PurgeData with the PolicyActivator service to clear large amounts of data in the Apache Derby database.

#### Symptom

Large amounts of disk space are being consumed when reporting is enabled by enabling one or more of the following options.

- Enabling Collect Reports in the PolicyLogger
- Enabling Collect Reports in one or more instances of the OMNibusEventReader
- Running the Impact Profile Report which is located in the Reports tab.

#### Cause

When the reporting functionality is enabled and Netcool/Impact is processing large volumes of data, the disk usage of the Derby database which is used to store reporting data could grow to a large value.

#### Resolution

To check the size of the database, search the \$IMPACT\_HOME/db/<ServerName>/derby directory for the ImpactDB directory.

To clear the data, you can use the sample policy called REPORT\_PurgeData in the Reports project. You can run the REPORT\_PurgeData policy to delete old data or to set up your own maintenance solution.

If you decide to use the REPORT\_PurgeData policy, you can adjust the policy to suit your environment by evaluating the event volume and the amount of reporting. The following parameters in the policy can be adjusted:

- MAX\_ROWS: controls the maximum number of rows to be deleted for each table when the policy gets triggered. The default value is 1000. If you decide to increase it to a higher value, check the heap usage of the Impact Server. You can check heap usage in one of the following ways:
  - View the Server Status section of the Configuration Documenter.
  - In the Memory Status feature of the Self Monitoring service.
- NUM\_DAYS: This value determines data which is older than the specified number of days. The default value is 2, so the policy deletes data which is more than two days old for each table.

You can either run this policy manually, or associate this policy with an instance of the PolicyActivator service which triggers it at regular intervals. You can adjust the interval based on the event volume and the amount of reporting data collected.

---

### JMS messages fail to get sent

JMS messages fail to get sent because there are too many pending JMS connections in the queue.

#### Symptoms

If a JMS message fails to get sent, for example, due to the JMS provider being unreachable, the JMS Connection call joins a queue of pending connections. Once the pending connections limit is reached (5 by default), any new calls to establish a connection to the JMS provider will not be made for the next 10 minutes (configurable). If this happens, you can see the following exception in the log:

```
Caused by: com.micromuse.common.datasource.JMSDataSourceException:
Too many pending JMS Connections, cannot proceed.
```

After that, an attempt is made to establish a connection to the JMS Provider, every 10 minutes. If it is successful, all the pending connections are cleared, and Netcool/Impact continues. Otherwise, it keeps attempting to establish a connection, once every 10 minutes. These failed pending calls get stored in the pending queue.

#### Resolution

You can clear the pending queue in one of the following ways:

- If you are using the JMS Listener service to send messages, you can clear the queue by running the following command in the CLI:
 

```
update Service set ClearPendingCalls=true where Name='JMSMessageListener';
```
- Restarting the JMS Listener service will also clear the pending calls queue. If you are triggering the SendJMSMessage, or ReceiveJMSMessage function, add this line to your policy:

```
ClearPendingCalls=true
```

#### Further steps

By default, the maximum number of pending JMS connections is 5, but you can configure it by adding the following property to the .ds file of the JMS data source:

```
<dsname>.JMS.MAXPENDINGCALLS=<new_limit>
```

After the maximum limit of pending calls is reached, attempts are made at 10 minutes intervals. To configure this interval add the following property in the <servername>\_server.props:

```
impact.jms.pending.duration=<new_time_in_milliseconds>
```

---

### System cannot handle a large SNMP table

#### Symptom

The system cannot handle an SNMP table that has more than 1000 rows.

By default Netcool/Impact can handle SNMP tables with up to 1000 rows. If you have an SNMP table with more than 1000 rows the system will only be able to access the first 1000 rows.

#### Resolution

To remedy this, set the following property in the \$IMPACT\_HOME/etc/<SERVER\_NAME>\_server.props file:

```
impact.snmp.table.maxnumrows=<number>
```

Where <number> is greater than or equal to 1; The default value is 1000 if not specified.

After you add this parameter, or change its value, you should restart the server so that it picks up the configuration change.

Note: Use this parameter only if you have an SNMP table with more than 1000 rows.

---

### Version control system displays a Working copy <directory name> locked error message

How to resolve a Working copy <directory name> locked error message and unlock the locked directory.

#### Symptom

An error message similar to this one is displayed:

```
Working copy ,<directory name> locked
svn: run 'svn cleanup' to remove locks (type 'svn help cleanup' for details)
```

#### Resolution

The solution is to run the svn cleanup <PATH> command to unlock the directory that is locked.

1. Go to your SIMPACT\_HOME/platform/<os name>/svn/bin folder.  
For example:

```
/opt/IBM/tivoli/impact/platform/linux/svn/bin folder
```

2. Run the following command: svn cleanup <Repository location>

Where <Repository location> is the directory that is locked.

For example, if your SIMPACT\_HOME/etc folder is locked, the command is:

```
svn cleanup /opt/IBM/tivoli/impact/etc
```

When the command is complete, the lock is removed from the directory.

If you receive this type of error message for other directories, for example SIMPACT\_HOME/policy you can run the same command.

svn cleanup <Repository location> becomes

```
svn cleanup /opt/IBM/tivoli/impact/policy
```

---

### Data items view cannot display all the data items

The data items view does not display all the data items correctly. This issue can occur if the data items view uses a table row that contains a large number of cells. This issue occurs because Netcool/Impact cannot render all the entries properly in HTML.

Netcool/Impact uses a Java API to create the HTML that displays the data items in the data items view. This API uses a hashcode to store child elements and the order of these elements. The API assigns a unique code to each hashcode that is stored in the hashtable. However, in some cases, this unique code can be duplicated. When this occurs, Netcool/Impact cannot display the entries in HTML.

For example, if you use a data view to display a row from a database table with more than 100 cells, the Java API duplicates some of the unique codes that are used to identify the hashcodes in the hashtable. As a result, some of the entries in the registry are overwritten. The data items view does not display all the cells from the table row.

While you cannot prevent this issue, it occurs on the UI only. It does not affect the underlying data.

---

### Removing hyperlinked text when editing policies in Internet Explorer

How to resolve hyperlinked text when editing policies in Internet Explorer.

#### Symptom

URLs and email addresses that you enter in the Policy Editor as plain text are automatically converted into hyperlinks. If the URL or email address is surrounded by double quotation marks, the browser removes the double quotation marks.

#### Cause

Internet Explorer automatically detects and converts plain text URLs inside content editable areas of a HTML page, such as the text area in the Policy Editor. The automatic hyperlinking is a built-in feature of Internet Explorer (version 5.5 and later) and is not configurable.

#### Resolution

The hyperlink is non consequential to Netcool/Impact. The Policy Editor will convert the policy content to plain text when the policy is saved to the Impact Server. You can either re-enter double quotation marks after the URL is converted to a hyperlink. Or you can copy and paste the URL with double quotation marks intact into the editor.

---

### Removing disassociated files that result from XinY policy

If you use the XinY wizard to create an XinY policy and associated data items, an accumulation of disassociated system files can occur. These files can negatively impact the processing performance of the Impact Server.

#### Symptoms

During failover and failback, an error can occur that causes a mismatch between the data items and the file system records. Certain files can become disassociated from the data items because of this mismatch. Netcool/Impact saves these files in the SIMPACT\_HOME/db/<ImpactServerName>/<DataTypeNumber> directory where <ImpactServerName> is the name of the Impact Server.

The buildup of these files can reduce the performance of the Impact Server.

#### Resolution

To check for a build-up of files in your installation, first, you need to find the data type number by looking at SIMPACT\_HOME/etc/<ImpactServerName>\_typelist and searching for wizard\_XinY\_EventStatusTallyType. Based on the index find associated number for this data type, then, use the following command to check the files in to the SIMPACT\_HOME/db/<ImpactServerName>/ directory:

```
ls -l SIMPACT_HOME/db/<ImpactServerName>/<DataTypeNumber>| wc -l
```

#### Procedure

1. To solve the issue, use the sample policy that is called XINY\_DataType\_PurgeData in the Reports project. You can run the XINY\_DataType\_PurgeData policy to delete old data or to set up your own maintenance solution. If you decide to use the XINY\_DataType\_PurgeData, you can adjust the policy to suit your installation. The following parameters in the policy can be adjusted:

```
InternalDataTypesList : This is an array of internal data types.
The data types will be relevant to your installation.
NumDays: Remove everything older than this number of days.
```

2. You can either run this policy manually, or associate this policy with an instance of the PolicyActivator service, which triggers the policy at regular intervals. You can adjust the interval based on the event volume and the amount of reporting data that is collected.

#### What to do next

These files accumulate again over time. To prevent a buildup of these files, you must repeat this procedure.

---

### Data source updates are not picked up by database and OMNIbus event readers

#### Symptom

When you edit a data source configuration that is assigned to a database event reader or an OMNIbus event reader, the event reader continues to use the previous data source configuration.

#### Resolution

The event reader does not pick up the new data source configuration unless you save the event reader changes.

1. Stop the event reader service.
  2. Edit the event reader data source, then click Clear State and Clear Queue and click Save on the event reader.
  3. Restart the event reader and the changes to the data source configuration are implemented.
- 

### Exceptions in the `impactserver.log` for failback if a data source is unavailable on startup

#### Symptom

If you configure the `impact.objectserver.failback.enabled=true` property in `NCL_server.props` and have an ObjectServer data source in failback configuration and have an event reader using this data source that is configured for automatic startup. If both ObjectServers are unavailable on startup, the `impactserver.log` has a steady stream of exceptions, about 2 per second.

#### Resolution

Change the data source configuration from failback to failover or disable failback to stop all the threads monitoring the data source.

- Edit the data source configuration in the GUI.
    1. Select the data source and click Edit.
    2. Change the failover option from Standard failback to Failover or Disable failover.
    3. Save the data source. Edit the data source configuration again and select Standard failback and save.
  - Edit the event reader service and restart the server.
    1. Select the event reader service and click Edit.
    2. In the General Settings tab, clear the Startup: Automatically when server starts check box.
    3. Restart the server to implement the changes.
- 

### Event Isolation and Correlation rules show a configuration error

#### Symptom

When you configure Event Isolation and Correlation rules. The rule panel that lists all the existing rules shows an error message.

"Sorry, an error has occurred"

An error message also occurs in the `wlp/usr/server/NCL/logs/messages.log`.

```
org.apache.cxf.phase.PhaseInterceptorChain
Application {http://soap.common.response.micromuse.com/}
SoapManagerFacadeService#{http://soap.common.response.micromuse.com/}
wrapPolicyResult has thrown exception,
unwinding now: com.micromuse.response.common.soap.SoapResponseServerException:
com.micromuse.response.common.SQLOrgNodeException:
Could not retrieve name of object from Key: ID is null for DataType:
EVENTRULES from SQLOrgNodeBag: DynamicOrgNodeBag for Type EVENTRULES
```

#### Resolution

Check the database tables for incorrect data. You can backup the existing tables by using DB2 tools. Remove all unnecessary records in the tables that belong to Event Isolation and Correlation. In the Event Isolation and Correlation data model, you can find a list of tables in the `EventIsolationAndCorrealtion` project.

---

### Services and Data Model tabs not releasing memory in IE10 and 11

Applies to Netcool/Impact 7.1.0.2

#### Symptom

Browser and client machine performance becomes slow and unresponsive. Task Manager shows the `iexplorer` process taking up far more memory than normal.

#### Cause

There is an issue where Service or Data Model (Data Types or Data Sources) tabs opened in the main services UI in IE10 and IE11 don't release the memory used by the tab. Each open tab takes in the region of 20-30MB, closing the tab only releases about 10MB. If the user is editing a number of such UI tabs, it causes IE to use up enough of the client machine's physical memory and some performance problems will be noticed.

#### Resolution

To workaround this issue, user needs to refresh the browser window to free up memory used by closed tabs. Logging out and logging in again has a similar effect.

---

### Errors in the message.log that can be ignored

Applies to Netcool/Impact 7.1

#### Symptom

The following errors seen in the `message.log` can be ignored, as they may appear during normal startup. (`SIMPACT_HOME/wlp/usr/servers/ImpactUI/logs/message.log`)

```

-----
1/26/15 18:47:08:415 EST 0000004a com.ibm.ws.session.WASSessionCore SESN01761: A new session context will be created for application key default_host/impactAdmin
1/26/15 18:47:08:415 EST 0000004a com.ibm.ws.util
I SESN01721: The session manager is using the Java default SecureRandom implementation for session ID generation.
1/26/15 18:47:09:245 EST 0000004a SystemErr R INF (Logger.java:331) - NetcoolLicenseServerImpl initialized
1/26/15 18:47:09:252 EST 0000004a SystemErr
1/26/15 18:47:09:269 EST 0000004a SystemOut O File : /opt/IBM/tivoli/impact/etc/impactgui.log4j.properties added to the monitoring for changes
1/26/15 18:47:09:333 EST 0000004a com.ibm.ws.webcontainer.servlet
SRVE0242I: impactAdmin"ImpactRestProviderServlet": Initialization successful.
1/26/15 18:47:09:573 EST 0000004e com.ibm.ws.webcontainer.webapp
Error Page Exception:

```

```
impactAdmin
```

```
/impactAdmin
```

```
Error Page Exception
```

```

com.ibm.ws.webcontainer.webapp.WebAppErrorReport:
com.ibm.ws.webcontainer.security.internal.WebSecurityCollaborator
Exception: Basic realm=&quot;defaultRealm&quot;
    at
com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.processSecurityPreInvokeException(CollaboratorHelperImpl.java:240)
    at
com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters (WebAppFilterManager.java:1116)
    at
com.ibm.ws.webcontainer.webapp.WebAppRequestDispatcher.dispatch(WebAppRequestDispatcher.java:1377)
    at
com.ibm.ws.webcontainer.webapp.WebAppRequestDispatcher.forward(WebAppRequestDispatcher.java:185)
    at
com.ibm.ws.webcontainer.webapp.WebApp.sendError(WebApp.java:3971)
    at
com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.processSecurityPreInvokeException(CollaboratorHelperImpl.java:242)
    at
com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1116)
    at
com.ibm.ws.webcontainer.webapp.WebApp.handleRequest(WebApp.java:4519)
    at
com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.handleRequest(DynamicVirtualHost.java:301)
    at
com.ibm.ws.webcontainer.WebContainer.handleRequest(WebContainer.java:954)
    at
com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.run(DynamicVirtualHost.java:266)
    at
com.ibm.ws.http.dispatcher.internal.channel.HttpDispatcherLink$TaskWrapper.run(HttpDispatcherLink.java:776)
    at
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1176)
    at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:641)
    at java.lang.Thread.run(Thread.java:795)
Caused by:
com.ibm.ws.webcontainer.security.internal.WebSecurityCollaborator
Exception: Basic realm="defaultRealm"
    at
com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.validateWebReply(WebAppSecurityCollaboratorImpl.java:485)
    at
com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.performSecurityChecks(WebAppSecurityCollaboratorImpl.java:453)
    at
com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.preInvoke(WebAppSecurityCollaboratorImpl.java:408)
    at
com.ibm.wsspi.webcontainer.collaborator.CollaboratorHelper.preInvokeCollaborators(CollaboratorHelper.java:443)
    at
com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.preInvokeCollaborators(CollaboratorHelperImpl.java:267)
    at
com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1045)
    ... 13 more

```

```

1/26/15 18:47:09:595 EST 00000041
com.ibm.tivoli.console.rest.client.RestClientHelper WUnable to query information from deployment url. Status:401
Url:https://<hostname>:<port>/impactAdmin/jsp/impactAdminPrefsRegister.jsp msg:Unauthorized
1/26/15 18:47:09:597 EST 00000041 PluginURLDetails E Cannot load plugin:
java.lang.NullPointerException
    at
com.ibm.tivoli.console.data.plugins.PluginURLDetails.loadPlugins (PluginURLDetails.java:233)
    at com.ibm._jsp._LogOn._jspService(_LogOn.java:162)
    at
com.ibm.ws.jsp.runtime.HttpJspBase.service(HttpJspBase.java:101)
    at
javax.servlet.http.HttpServlet.service(HttpServlet.java:668)
    at
com.ibm.ws.webcontainer.servlet.ServletWrapper.service(ServletWrapper.java:1274)
    at
com.ibm.ws.webcontainer.servlet.ServletWrapper.handleRequest(ServletWrapper.java:767)
    at
com.ibm.ws.webcontainer.servlet.ServletWrapper.handleRequest(ServletWrapper.java:469)
    at
com.ibm.wsspi.webcontainer.servlet.GenericServletWrapper.handleRequest(GenericServletWrapper.java:122)
    at
com.ibm.ws.jsp.webcontainerext.AbstractJSPExtensionServletWrapper.handleRequest(AbstractJSPExtensionServletWrapper.java:215)
    at
com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters (WebAppFilterManager.java:1060)
    at
com.ibm.ws.webcontainer.webapp.WebApp.handleRequest(WebApp.java:4519)
    at
com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.handleRequest(DynamicVirtualHost.java:301)
    at
com.ibm.ws.webcontainer.WebContainer.handleRequest(WebContainer.java:954)
    at
com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.run(DynamicVirtualHost.java:266)
    at
com.ibm.ws.http.dispatcher.internal.channel.HttpDispatcherLink$TaskWrapper.run(HttpDispatcherLink.java:776)
    at

```

```

java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1176)
    at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:641)
    at java.lang.Thread.run(Thread.java:795)

1/26/15 18:47:10:334 EST 0000004d
org.apache.cxf.service.factory.ReflectionServiceFactoryBean ICreating Service
{http://soap.common.response.micromuse.com} SoapResponseServerHe
artbeatService from WSDL:wsjar:file:/opt/IBM/tivoli/impact/lib/nciClient.jar!/META-INF/wsdl/8wsdl
1/26/15 18:47:10:590 EST 00000018
com.ibm.ws.kernel.feature.internal.FeatureManager A
CWWKF00151: The server has the following interim fixes installed: PI16961.
1/26/15 18:47:10:590 EST 00000018
com.ibm.ws.kernel.feature.internal.FeatureManager I
CWWKF00081: Feature update completed in 35.556 seconds.
1/26/15 18:47:10:591 EST 00000018
com.ibm.ws.kernel.feature.internal.FeatureManager A
CWWKF00111: The server ImpactUI is ready to run a smarter
planet.

```

---

## Errors returning large amounts of data with View Data Items

Applies to Netcool/Impact 7.1

### Symptom

The following errors may be seen in the GUI when viewing Data Items for a Data Model Type: Error message: HTTP Error 500 Internal Server Error.

### Cause

Netcool/Impact reads data for DSAs into memory. If too much data is to be returned, then this message.log can be seen. This is usually only an issue for data types which contain Clobs and large data records.

### Resolution

Apply a filter in the GUI for the data type to restrict the number of rows returned.

---

## serviceNow forces Impact to qualify a soap response as being valid

### Symptom

The following error will display in the policy error alert box when a web service policy is executed.

ERROR: Unhandled Exception: error: **The document is not a insertResponse@http://www.service-now.com/change\_request:**

**document element namespace mismatch expected** "http://www.service-now.com/change\_request" got "" in policy: myWebServicePolicy

### Cause

Impact may consider SOAP responses from a ServiceNow instance to be invalid.

### Resolution

In Impact 7.1 , the error below is resolved by adding the request parameter to the WSEndPoint value in the webservices policy.

The following must be added to the Impact webservices policy: **"&elementFormDefault=qualified"**.

**WSEndPoint = "https://XXX.service-now.com/change\_request.do?SOAP&elementFormDefault=qualified"**

Following the update to the policy, the error will no longer occur.

## How to see DASH user in Impact policy

When a DASH widget points to Impact and you login to DASH where a widget is refreshed to source data from Impact , you can view the user logged to DASH with the following snippet of code from within a javascript Impact policy:

```

var loginId = "";
if ( typeof eventDestination != 'undefined' && eventDestination != null && typeof remoteSessionId != 'undefined' && remoteSessionId != null ) {
  if ( loginId == "" ) {
    loginId = RExtract(eventDestination, "/(.*)_"+remoteSessionId);
  }
}

```

## Installation issues

### Upgrading Impact removes TBSM war files.

#### Symptom

Using TBSM Administrator page, TBSM Service Editor is blank when a service is selected.

#### Cause

The Impact FP installer removes TBSM war files from the wlp apps directory.

**Resolution**

The manual fix for this is to stop the Impact back end server and copy the was files back from the backup.

i.e if upgrade was **from** FP14, then these are the commands

```
cd SIMPACT_HOME
cp -r ./backup/install/server_backup/7.1.0.14/wlp/usr/servers/TBSM/apps/TBSM.ear/tbsm.war wlp/usr/servers/TBSM/apps/TBSM.ear
cp -r ./backup/install/server_backup/7.1.0.14/wlp/usr/servers/TBSM/apps/TBSM.ear/chartService.war wlp/usr/servers/TBSM/apps/TBSM.ear
cp -r ./backup/install/server_backup/7.1.0.14/wlp/usr/servers/TBSM/apps/TBSM.ear/markerWeb.war wlp/usr/servers/TBSM/apps/TBSM.ear
cp -r ./backup/install/server_backup/7.1.0.14/wlp/usr/servers/TBSM/apps/TBSM.ear/META-INF wlp/usr/servers/TBSM/apps/TBSM.ear
```

Then restart the Impact back-end server.

**Note:** this issue has been resolved in Impact 7.1.0 FP16

---

**Upgrading from Impact 7.1.0.1 to 7.1.0.14 Fails.****Symptom**

Upgrading from Impact 7.1.0.1 to 7.1.0.4 fails.

**Cause**

The FP14 installer is looking for a directory called <impact\_home>/uiproviderconfig but this does not exist in FP1.

**Resolution**

The issue will be fixed with the release of 7.1.0.15.

In the interim, either of the following work arounds will do:

1. Copy the <impact\_home>/uiproviderconfig directory, to the <backup>/install/gui\_backup/7.1.0.1 directory (soon after the Upgrade installer has created the <backup>/install/gui\_backup/7.1.0.1 and while the installer is still running).

OR

2. First upgrade to any FP between FP4 and FP13, before upgrading to FP14.

---

**Full Impact install on Windows using FP14 leaves blank Profile Port page.****Symptom**

The Common Configuration\Ports page is blank. If it is required to change the default ports, this will not be possible.

**Cause**

During the prerequisites, the installation detected Microsoft Visual C++ 2013 Redistributable run-time is not installed on the machine. Issue happens during Windows installs.

**Resolution**

In case customer wants to use non-default ports, stopping the install and starting it again fixes the issue, as follows:

1. Quit/close the installer after the Microsoft Visual C++ 2013 Redistributable run-time warning.
  2. Run vc\_redist\_x64-2013.exe.
  3. Run/start new install
- 

**Cannot install FP13 on 3rd (or subsequent) cluster members****Symptom**

7.1.0-TIV-NCI-FP0013 does not install successfully on cluster members without Derby.

**Cause**

APAR IJ03805 (shipped in FP13) checks that Derby is successfully started for the Cluster member to start. But 3rd (or subsequent) cluster members do not contain Derby. Though they do have an ImpactDatabase service with autostart=true (which is required for the Health Checker).

Impact uninstaller was unable to remove the Impact Widows services during the uninstall

**Resolution**

The issue is for resolution in FP14 with APAR IJ07401.

In the interim, the following steps are required to install FP13 on a cluster member which does not have derby:

Option 1: Including the Health Checker

- Start the installation from the update\_gui.sh to run the health checker.
- Then, when Installation Manager starts, edit the impact/etc/<Server>\_impactdatabase.props file and set autostart=false.
- Then proceed with the FP13 update

**OR**

Option 2: Including the Health Checker

- Start the installation from the update\_console.sh script.sh, to run the health checker.
- Then, when the health check portion (step 1) is complete, edit the impact/etc/<Server>\_impactdatabase.props file and set autostart=false.
- Then proceed with the FP13 update

**OR**

Option 3: Without the Health Checker

- Stop the Impact Backend Server
- Edit the impact/etc/<Server>\_impactdatabase.props file and set autostart=false.
- Then proceed with the FP13 update via Installation Manager

---

**Impact Windows services are left on the system after uninstalling Impact****Symptom**

Impact Windows services "Tivoli Netcool Impact Server - NCI 9080" and "Tivoli Netcool Impact GUI Server - ImpactUI 16311" still in Services list after Impact uninstall.

**Cause**

Impact uninstaller was unable to remove the Impact Widows services during the uninstall

**Resolution**

Use the following steps to remove Impact Windows services

1. Launch Windows Services dialog
2. Select Tivoli Netcool Impact Server - NCI 9080, right click and select Properties
3. Take a note of the service name, ex: NetcoolImpactNCI\_9080
4. From the windows command line prompt, type: sc delete NetcoolImpactNCI\_9080
5. From Windows Services dialog, select Tivoli Netcool GUI Server - ImpactUI 16310
6. Take a note of the service name, ex: NetcoolImpactImpactUI\_16310
7. From the windows command line prompt, type: sc delete NetcoolImpactImpactUI\_16310
8. Close the Windows Services dialog

Note: Impact Windows service name may be different on your system due to different instance name and port.

---

**Cannot install or update Impact from Installation Manager that connects directly to Passport Advantage****Symptom**

No Impact components show up on Installation Manager when connecting to Passport Advantage.

**Cause**

IBM has updated the security on Passport Advantage and only Installation Manager 1.8.1 or newer has the code patch to access Passport Advantage.

**Resolution**

Install or update the current Installation Manager on your system to version 1.8.1 or newer.

Use the following steps to update Installation Manager.

1. Launch **Installation Manager**
2. From the menu, select open **File > Preferences**
3. Select **Update**
4. Select the checkbox **Search for Installation Manager updates** and click OK
5. From the main dialog, select **Update**
6. Select **Installation Manager** from the list to update.

---

### Cannot install Netcool/Impact on SUSE Linux Enterprise Server 12 (SLES 12) using GUI mode

Applies to Netcool/Impact 7.1.0.1.

#### Symptom

When you install Netcool/Impact on Linux on SUSE Linux Enterprise Server 12 (SLES 12), the GUI installation mode does not work.

#### Cause

This is a known limitation in Installation Manager version 1.7.3.1.

#### Resolution

Select from one of the following options:

- Install Netcool/Impact by using the console or silent mode.
- Upgrade Installation Manager on the server to be version 1.8.0 or higher.

---

### Netcool/Impact installation fails when Installation Manager is installed to a non-default directory

Netcool/Impact installation fails when Installation Manager is installed to a non-default directory with option `-dL` on Linux or UNIX systems. For example, `userinst -dL /opt/IBM/IBMIMData` or `groupinst -dL /opt/IBM/IBMIMData`.

#### Symptom

Netcool/Impact installation failed on Linux or UNIX systems and the following error message is displayed.

```
ERROR: Error during "post-install configuration" phase:  
CRIMA1217E: A problem occurred during the execution of the  
/opt/IBM/tivoli/impact/install/configuration/cfg_scripts/collect_logs.xml file
```

#### Cause

The `collect_logs.xml` script could not find the default IBM Installation Manager directories under user home directory

`$HOME/var/ibm/InstallationManager/logs` and `$HOME/var/ibm/InstallationManager/histories`.

#### Resolution

Complete the following steps.

1. Create the directory `$HOME/var/ibm/InstallationManager/logs`.
2. Create the directory `$HOME/var/ibm/InstallationManager/histories`.
3. Rerun the Netcool/Impact installation.

---

### Cannot install Netcool/Impact on Linux on System z RHEL 7 using GUI mode

Applies to Netcool/Impact 7.1.0.1.

#### Symptom

When you install Netcool/Impact on Linux on System z RHEL 7, the GUI installation mode does not work.

#### Cause

This is a known limitation in Installation Manager version 1.7.3.1.

#### Resolution

Select from one of the following options.

- Install Netcool/Impact by using the console or silent mode.
- Upgrade Installation Manager on the server to be version 1.8.0 or higher.

---

### An internal error occurred on the User Registry panel

#### Symptom

Run a Netcool/Impact installation, select the GUI and Extensions option in the Installation Manager and then go back to add the Impact Server option. You see the following error message.

```
An internal error occurred on the User Registry panel
```

#### Resolution

Close the Installation Manager and start it again.

---

### Unable to view the Netcool/Impact GUI on a Solaris installation

Applies to Netcool/Impact 7.1.0.1.

#### Symptom

A user logs in to the Netcool/Impact GUI on Solaris. The user sees the following error message.

```
Connection Failed..... Unable to reach the nameserver to get the list of clusters
```

#### Resolution

Restart the Impact Server. Then, restart the Netcool/Impact GUI server.

---

### Unable to access the Netcool/Impact GUI after a new installation on Solaris

Applies to Netcool/Impact 7.1.0.1.

#### Symptom

When a Solaris installation is complete, a user logs in to the Netcool/Impact GUI. The GUI does not load. The user sees the following error message.

```
Context Root Not Found
```

#### Resolution

Restart the Impact Server. Then, restart the Netcool/Impact GUI server.

---

### Installation fails when you configure Netcool Operations Insight Impact Extensions

#### Symptom

When you install Netcool Operations Insight, the installation fails and the Installation Manager log file contains the following text:

```
/opt/IBM/tivoli/impact/install/configuration/cfg_scripts/  
configure_impact_extensions.xml:253:  
Timed out waiting for string Impact_instance_started_successfully to appear in file  
/opt/IBM/tivoli/impact/install/configuration/../../logs/impactserver.log
```

#### Resolution

Install the Netcool/Impact components again.

---

### Running the Prerequisite Scanner on Red Hat 7 returns an error message

#### Symptom

Running the prerequisite scanner on Red Hat 7 returns the following error message.

```
config_parser.sh: line 178: [: too many arguments
```

#### Cause

The current prerequisite scanner does not support Red Hat 7.

#### Resolution

You can safely ignore this error. The remaining prerequisite scanner output is valid and you need to address any issues that occur.

---

### No instance(s) available messages displayed during console rollback

Applies to Netcool Impact 7.1.0.4

#### Symptom

When doing a console rollback on Windows from 7.1 FP4 to any older version Impact for the first time, lots of extra messages appear on the screen with the following text:

```
No instance(s) Available.
```

#### Resolution/Workaround

After rolling back, do not restore the image, just install FP4 again. Then rollback from FP4 back to the older version and you will not see the warning.

---

### Unable to connect to OMNIbus during Install with Valid Credentials (Host, Port, Username, Password)

#### Symptom

When applying Fix Pack 4 on top of 7.1.0.2 and 7.1.0.3 and you have changed the UI locale post install. The install fails to communicate with OMNIbus even when the credentials (host, port, username, password) are the correct ones.

#### Resolution

Ensure that the user is enabled in OMNIbus. You can launch nco\_config in OMNIbus and check the User Information to make sure it is enabled. The following messages will be in the console.log file (IMPACT\_HOME/wlp/usr/servers/<profile name>/logs directory)

```
[WARNING ] ObjectServerRepository: Password check failed for user: impactadmin  
[AUDIT ] CWWKS1100A: Authentication did not succeed for user ID impactadmin. An invalid user ID or password was specified.
```

---

### Cannot find Netcool/Impact components to install after Installation Manager restarts

#### Symptom

Cannot find Netcool/Impact components to install after the Installation Manager is restarted.

#### Resolution

1. Launch Installation Manager.
    - o On Windows systems
      - GUI: C:\Program Files\IBM\Installation Manager\eclipse\launcher
      - Console: C:\Program Files\IBM\Installation Manager\eclipse\tools\imcl -c
    - o On UNIX systems
      - GUI: USER\_HOME/IBM/InstallationManager/eclipse/launcher
      - Console: USER\_HOME/IBM/InstallationManager/eclipse/tools/imcl -c
  2. In the menu, select Files > Preferences > Repositories
  3. Choose Add Repository and give the path INSTALL\_IMAGE/ImpactRepository/disk1/diskTag.inf. Where *INSTALL\_IMAGE* is the path to the Netcool/Impact installation image directory. Important: If you are using the IBM Netcool Operations Insight installation image, add the repository and give the path INSTALL\_IMAGE/ImpactExtRepository/disk1/diskTag.inf.
  4. Go back to the Installation Manager main page and select Install.
- 

### Silent installation misleading warning message

#### Symptom

A misleading warning message is displayed after a Netcool/Impact silent installation.

The warning message is about repositories that are not connected and unavailable.

```
[impact@nc048044 dec4_2]$ ./install_silent.sh ./silentResponseCCLuster_dec4.xml
-acceptLicense
imLocation=/home/impact/IBM/InstallationManager
imInstalled=true
imIs64Bit=true
Installed com.ibm.tivoli.impact.gui_server_7.1.0.20131205_0040 to the
/opt/IBM/tivoli/impact directory.
Installed com.ibm.tivoli.impact.server_7.1.0.20131205_0040 to the
/opt/IBM/tivoli/impact directory.
CRIMA1002W WARNING: The following repositories are not connected:
-/home/impact/installers/dec2_2/ImpactRepository
-/home/impact/installers/dec2_2/ImpactRepository/disk1
```

Explanation: Failed to connect to one or more repositories. The repository might be unavailable for several reasons.

User Action: Check the following items:  
 Verify the repository location is correct.  
 For repositories that require credentials, verify that the credentials are correct. Credentials can be set in the Repositories preference.  
 Verify the network connection is available.  
 For environments that use proxies, verify the proxy settings are correct. Proxy settings can be set in the HTTP/FTP preference.  
 Update offerings require that base offerings be available. Verify the base offering is available in a repository. Use the listAvailablePackages command to view the packages available in a repository.  
 If you are using the IBM Passport Advantage site, verify the connection to the site is correct. Verify the Passport Advantage connection in the Passport Advantage preference.  
 For environments that use firewalls, verify that access to the repository location is available.

#### Cause

IBM Installation Manager lists a repository unavailable to Netcool/Impact, which can happen if IBM Installation Manager is installed on the host before Netcool/Impact is installed.

#### Resolution

If the repository that is listed in the silent installation response file is working, then ignore warning messages about other repositories.

---

### Non-root user access to CD-ROM directory

#### Symptom

CD-ROM directory permissions are set to a non-root user when mounted by root user, but the CD-ROM directory cannot be accessed by other non-root users.

#### Resolution

Complete the following steps.

1. Mount the CD-ROM as root user.
  2. Copy the entire CD-ROM directory to the local machine.
  3. To grant read access to all non-root users, use the `chmod` command.
- 

### Not possible to install the Impact Server and the GUI Server with the same IBM Installation Manager session

#### Symptom

The GUI Server installation displays a validation exception.

#### Cause

The same IBM Installation Manager session is used to install the Impact Server and the GUI Server.

#### Resolution

After the Impact Server installation is complete, quit the IBM Installation Manager. For the GUI Server installation, restart the IBM Installation Manager.

---

### Installation Manager CRIMA1002W WARNING message

What to do if the Installation Manager CRIMA1002W WARNING message shows during a successful installation.

The following warning shows during the installation and the installation still completes:

```
CRIMA1002W WARNING: The following repositories are not connected:
```

Installation Manager could not connect to one or more repositories which were previously configured in Installation Manager. You can safely ignore the warning, or follow the User Action instructions in the log to correct the configuration.

---

### Cannot select another authentication option on the installation panel

#### Symptom

In some cases when you use the GUI mode installer, you might not be able to change the authentication method on the Installation panel.

#### Resolution

- Cancel the installation and rerun the Installation by using the Console Mode or Silent Mode installation options.
- You can also change the authentication method after installation by using the `confAuth4OMNIBus` and `confAuth4LDAP` utilities.

For more information about `confAuth4OMNIBus` see the *Security* section in the Administration Guide. For more information about `confAuth4LDAP` see the *Configuring servers* section in the Administration Guide.

---

### Exception messages display in the server locale

How to resolve exception messages that display in another language.

#### Symptom

While configuring a Netcool/Impact data source, data type, or viewing data from a data type, you might receive exception messages from the back end server that show in the locale of the server system.

#### Resolution

You must run the Impact Profile in the same locale as the browser locale.

---

### Impact not starting on any Security-enhanced Linux (SELinux) system

Impact not starting on any Security-enhanced Linux (SELinux) system.

#### Symptom

The following messages appear:

```
JVMJ9VM011W Unable to load j9jit23" and "JVMJ9VM011W Unable to load jclscar_23:  
cannot restore segment prot after reloc: Permission denied
```

#### Cause

If any security-enhanced Linux (SELinux) is enabled, you cannot start Impact, as SELinux prohibits loading shared libraries that are not authorized.

#### Resolution

The way around this issue is to run `setenforce 0` at the command line, as the root user, before starting Impact. You can also permanently disable SELinux by commenting out the `SELINUX=disabled` line in the `/etc/selinux/config` file.

You must restart the system for changes to take effect.

---

### Maintenance Window Management (MWM) does not work if the default cluster name is not used

#### Symptom

Maintenance Window Management fails to work properly if the default cluster name `NCICLUSTER` is not used. Upon loading the MWM main page, you see the following message:

```
Could not retrieve a client for accessing the Impact server,  
under cluster: clustername
```

#### Cause

The MWM operator view is configured to work with the default cluster name `NCICLUSTER` in a new install.

#### Resolution

You must run the `$IMPACT_HOME/bin/nc_ant` tool on the GUI Server. Use this command to create the operator view files for the Event Isolation and Correlation and Maintenance Window Management.

```
nc_ant -f installAddOnOpview.xml -DCLUSTERNAME=ClusterName NewCluster
```

Where `ClusterName` is the cluster name. The `NewCluster` parameter is a hardcoded parameter and is not meant to be changed.

### When you load the Configuration Documenter, the URL uses the GUI Server IP address instead of the FQDN

When the Configuration Documenter starts, the Configuration Documenter URL uses the IP address that is used by the GUI Server to connect to the Impact Server.

#### About this task

In some cases, the Configuration Documenter is unable to connect to the Impact Server because of problems with the IP address used by Netcool/Impact.

#### Procedure

1. Stop the Impact Server.
2. To enable Netcool/Impact to use the FQDN (Fully Qualified Domain Name) instead of the IP address, add the following statement to the `NCI_server.props` file in the `<install_directory>/impact/etc/` directory:
 

```
impact.server.iphostname=<Fully_qualified_domain_name>
```

where `<Fully_qualified_domain_name>` is the fully qualified domain name.
3. Save your changes
4. Restart the Impact Server.

#### Results

When the Configuration Documenter starts, the URL uses the FQDN to connect to the Impact Server.

## Error Messages in the ImpactUI console.log and messages.log during ImpactUI server startup

The following errors seen in the console.log can be ignored, as they may appear during normal startup.

They appear in Impact 7.1 and 7.1.0.1. They have been cleaned up in Impact 7.1.0.2.

(`$IMPACT_HOME/wlp/usr/servers/ImpactUI/logs/console.log`)

```
m_Key is: com.ibm.crypto.fips.provider.AESSecretKey@1d46b96b in constructor
[ERROR ] Illegal Block Size Input length (with padding) not multiple of 16 bytes
m_Key is: com.ibm.crypto.fips.provider.AESSecretKey@a92fe57 in constructor
[ERROR ] Illegal Block Size Input length (with padding) not multiple of 16 bytes
m_Key is: com.ibm.crypto.fips.provider.AESSecretKey@5003bee in constructor
[ERROR ] Illegal Block Size Input length (with padding) not multiple of 16 bytes
m_Key is: com.ibm.crypto.fips.provider.AESSecretKey@2b84c1f9 in constructor
[ERROR ] Illegal Block Size Input length (with padding) not multiple of 16 bytes
m_Key is: com.ibm.crypto.fips.provider.AESSecretKey@8f377104 in constructor
[ERROR ] Illegal Block Size Input length (with padding) not multiple of 16 bytes
[err] INFO [LargeThreadPool-thread-29] (Logger.java:331) - NetcoolLicenseServerImpl initialized
[err] INFO [LargeThreadPool-thread-29] (Logger.java:331) - NetcoolLicenseServerImpl initialized
File : /opt/ibm/netcool/impact/etc/impactgui.log4j.properties added to the monitoring for changes
[ERROR ] Error Page Exception:

                                impactAdmin
                                /impactAdmin
                                Error Page Exception
                                com.ibm.ws.webcontainer.webapp.WebAppErrorReport: com.ibm.ws.webcontainer.security.internal.WebSecurityCollaboratorException: Basic
realm="&quot;defaultRealm&quot;
at com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.validateWebReply(WebAppSecurityCollaboratorImpl.java:485)
at [internal classes]
Caused by: com.ibm.ws.webcontainer.security.internal.WebSecurityCollaboratorException: Basic realm="defaultRealm"
... 3 more

[WARNING ] Unable to query information from deployment url. Status:401 Url: https://impact:16311/impactAdmin/jsp/impactAdminPrefsRegister.jsp msg:Unauthorized
[ERROR ] Cannot load plugin:
java.lang.NullPointerException
[AUDIT ] CWWKF00151: The server has the following interim fixes installed: PI16961.
[AUDIT ] CWWKF00111: The server ImpactUI is ready to run a smarter planet.
```

The following errors seen in the messages.log can be ignored, as they may appear during normal startup.

They appear in Impact 7.1 and 7.1.0.1. They have been cleaned up in Impact 7.1.0.2.

(SIMPACT\_HOME/wlp/usr/servers/Impact/UI/logs/messages.log)

```
[12/19/14 12:58:42:663 AKST] 00000052 com.ibm.ws.webcontainer.webapp          E Error Page Exception:
                                     impactAdmin
                                     /impactAdmin
                                     Error Page Exception
                                     com.ibm.ws.webcontainer.webapp.WebAppErrorReport: com.ibm.ws.webcontainer.security.internal.WebSecurityCollaboratorException: Basic
realm="&quot;defaultRealm&quot;
at com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.processSecurityPreInvokeException(CollaboratorHelperImpl.java:240)
at com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1116)
at com.ibm.ws.webcontainer.webapp.WebAppRequestDispatcher.dispatch(WebAppRequestDispatcher.java:1377)
at com.ibm.ws.webcontainer.webapp.WebAppRequestDispatcher.forward(WebAppRequestDispatcher.java:185)
at com.ibm.ws.webcontainer.webapp.WebApp.sendError(WebApp.java:3971)
at com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.processSecurityPreInvokeException(CollaboratorHelperImpl.java:242)
at com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1116)
at com.ibm.ws.webcontainer.webapp.WebApp.handleRequest(WebApp.java:4519)
at com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.handleRequest(DynamicVirtualHost.java:301)
at com.ibm.ws.webcontainer.WebContainer.handleRequest(WebContainer.java:954)
at com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.run(DynamicVirtualHost.java:266)
at com.ibm.ws.http.dispatcher.internal.channel.HttpDispatcherLink$TaskWrapper.run(HttpDispatcherLink.java:776)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1176)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:641)
at java.lang.Thread.run(Thread.java:795)
Caused by: com.ibm.ws.webcontainer.security.internal.WebSecurityCollaboratorException: Basic realm="defaultRealm"
at com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.validateWebReply(WebAppSecurityCollaboratorImpl.java:485)
at com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.performSecurityChecks(WebAppSecurityCollaboratorImpl.java:453)
at com.ibm.ws.webcontainer.security.WebAppSecurityCollaboratorImpl.preInvoke(WebAppSecurityCollaboratorImpl.java:408)
at com.ibm.wsspi.webcontainer.collaborator.CollaboratorHelper.preInvokeCollaborators(CollaboratorHelper.java:443)
at com.ibm.ws.webcontainer.osgi.collaborator.CollaboratorHelperImpl.preInvokeCollaborators(CollaboratorHelperImpl.java:267)
at com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1045)
... 13 more
```

```
[12/19/14 12:58:42:690 AKST] 00000046 com.ibm.tivoli.console.rest.client.RestClientHelper  W Unable to query information from deployment url. Status:401 Url: https://impact:16311/impactAdmin
/jsp/impactAdminPrefsRegister.jsp  msg:Unauthorized
```

```
[12/19/14 12:58:42:691 AKST] 00000046 PluginURLDetails          E Cannot load plugin:
java.lang.NullPointerException
at com.ibm.tivoli.console.data.plugins.PluginURLDetails.loadPlugins(PluginURLDetails.java:233)
at com.ibm._jsp._LogOn._jspService(_LogOn.java:162)
at com.ibm.ws.jsp.runtime.HttpJspBase.service(HttpJspBase.java:101)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:668)
at com.ibm.ws.webcontainer.servlet.ServletWrapper.service(ServletWrapper.java:1274)
at com.ibm.ws.webcontainer.servlet.ServletWrapper.handleRequest(ServletWrapper.java:767)
at com.ibm.ws.webcontainer.servlet.ServletWrapper.handleRequest(ServletWrapper.java:469)
at com.ibm.wsspi.webcontainer.servlet.GenericServletWrapper.handleRequest(GenericServletWrapper.java:122)
at com.ibm.ws.jsp.webcontainerext.AbstractJSPExtensionServletWrapper.handleRequest(AbstractJSPExtensionServletWrapper.java:215)
at com.ibm.ws.webcontainer.filter.WebAppFilterManager.invokeFilters(WebAppFilterManager.java:1060)
at com.ibm.ws.webcontainer.webapp.WebApp.handleRequest(WebApp.java:4519)
at com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.handleRequest(DynamicVirtualHost.java:301)
at com.ibm.ws.webcontainer.WebContainer.handleRequest(WebContainer.java:954)
at com.ibm.ws.webcontainer.osgi.DynamicVirtualHost$2.run(DynamicVirtualHost.java:266)
```

```
at com.ibm.ws.http.dispatcher.internal.channel.HttpDispatcherLink$TaskWrapper.run(HttpDispatcherLink.java:776)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1176)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:641)
at java.lang.Thread.run(Thread.java:795)
```

---

## Impact install on AIX failing when XPG\_SUS\_ENV is set to ON

### Symptom

Impact install on AIX fails with error

*JVM9VM015W Initialization error for library j9gc26(2): Failed to instantiate heap; 1M requested*

### Cause

When XPG\_SUS\_ENV is set to ON, the program will not run if the maxdata value is larger than the current hard limit on data size

### Resolution

- 1) Open a command line prompt
  - 2) Type: unset XPG\_SUS\_ENV
  - 3) Install Impact
- 

## Rollback to the previous version of Impact failed

### Symptom

Rollback to the previous version failed with message:

"Failed to delete c:\Program Files\IBM\tivoli\impact\impact.version.properties"

### Resolution

- 1) Launch: IMPACT\_HOME\install\rollback\rollback\_gui.bat
  - 2) Select Rollback from Installation Manager
  - 3) Select the Impact Server that you want to rollback and complete the Installation Manager rollback process
  - 4) Run the following script from the command line prompt:  
IMPACT\_HOME\install\rollback\restore\_from\_backup.bat
  - 5) Select **Yes** to proceed with the file copy.
  - 6) Restart the Impact Server.
- 

## JRExec Service fails to start on Windows

This applies to version 7.1.0.3 Windows install only

### Symptom

When the JRExec Service is started on a 7.1.0.3 Windows setup, it would fail with the following error message:  
Exception in thread "main" java.lang.NoClassDefFoundError: org.apache.log4j.Logger

### Resolution

- 1) Edit the nci\_jrexec.conf file located in your IMPACT\_HOME/bin directory.
  - 2) Edit the line: IMPACT\_LOG4J\_JAR=lib3plog4j-1.2.8.jar and add a slash "/" between lib3p and log4j-1.2.8.jar so that this line becomes:  
IMPACT\_LOG4J\_JAR=lib3p/log4j-1.2.8.jar
  - 3) Save the file and restart.
- 

## Silent install fails with IMPACTIN0275E

### Symptom

When installing Netcool/Impact, with silent install, the following message is displayed:

IMPACTIN0275E A local fully qualified host name is required. The user.localHostName is not defined in the response file.

### Cause

user.localHostName can be specified in the silent install response file. If not set, localhost is used for the default value for the Fully Qualified Hostname. If user.localHostName is not set and localhost is not resolvable for the install user, IMPACTIN0275E is displayed.

### Resolution

To resolve: add

```
<data key='user.localHostName' value='FQDN'/>
to the silent install response file.
```

## Late breaking known issues

Essential reading before you install Netcool/Impact 7.1

---

### Web services security does not work

(Applies to Netcool/Impact 7.1 GA Linux only)

#### Problem

Web services security does not work. The following exception about incompatible classes is displayed.

```
org.apache.ws.security.WSSecurityException: Error in converting SOAP Envelope to Document;
nested exception is:
java.lang.ClassCastException:
org.apache.axiom.soap.impl.dom.SOAPMessageImpl
incompatible with org.apache.axiom.om.OMNode
```

#### Resolution

- Download the following JAR files from the zip file provided with this topic.
  - Rampart Package
    - opensaml-2.2.3.jar
    - xmltooling-1.2.0.jar
    - rampart-core-1.5.2.jar
    - rampart-policy-1.5.2.jar
    - rampart-trust-1.5.2.jar
    - wss4j-1.5.12.jar
  - Axis2
    - jaxen-1.1.1.jar
    - mex-1.6.2-impl.jar
- Stop the Impact server
- Copy the JAR files to the SIMPACT\_HOME/dsalib directory.
- Restart the Impact server.

Download [WebServiceSecurityJars.zip](#)

---

### Migrating from Netcool/Impact 5.1.1 FP2 (or later) to Netcool/Impact 7.1

(Applies to Netcool/Impact 7.1 GA Linux only)

**Problem:** When migration is finished Netcool/Impact 7.1 fails to start and throws the following exception:

```
java.lang.VerifyError: JVMVRFY012 stack shape inconsistent; class=com/micromuse/response/jabber/JabberReader, method=startRunning()V, pc=338
```

**Solution:** Remove the following JAR files from SIMPACT\_HOME/dsalib and **restart Impact Server**:

```
AdventNetSnmp-4.jar
ant-contrib-1.0b2.jar
axiom-api-1.3.1.jar
axiom-dom-1.3.1.jar
axiom-impl-1.3.1.jar
axis2-codegen-1.3.1-3537.jar
axis2-kernel-1.3.1-3537.jar
axis2-xmlbeans-1.3.1-3537.jar
commons-logging-1.1.jar
ipa-1.0-20120430.jar
neethi-1.3.1.jar
smack-2.2.1.jar
smackx-2.2.1.jar
xlsxScanner-1.1.14.jar
xlsxScannerUtils-1.1.14.jar
XmlSchema-1.3.1.jar
```

---

### Too many sockets opened when SSL communication enabled between GUI and Backend Impact Servers

If communication between GUI and backend Impact servers is configured to be secure (i.e. via running SIMPACT\_HOME/install/security/configImpactSSL.sh) an issue can occur where the backend server opens too many sockets, causing the backend server to stop running.

With SSL configured, the problem is more likely to occur with the following additional circumstances:

- large numbers of artifacts (services, data sources, and data types)
- multiple browsers connecting at the same time
- configuring services to auto-refresh in the GUI preferences

This issue affects Tivoli Netcool/Impact the following releases:

7.1.0.0

7.1.0.1 IF0001

7.1.0.1

7.1.0.2

#### Symptom:

When the issue occurs, the GUI will report an error and the following message can be seen in the Backend Impact Server messages log:

```
org.apache.cxf.phase.PhaseInterceptorChain$WInterceptor for {http://soap.common.response.micromuse.com/}SoapResponseServerHeartbeatService# {http://soap.common.response.micromuse.com/}isServerAlive has thrown exception, unwinding now
```

```
org.apache.cxf.interceptor.Fault: Could not send Message.
```

```
at org.apache.cxf.interceptor.MessageSenderInterceptor$MessageSenderEndingInterceptor.handleMessage(MessageSenderInterceptor.java:64)
```

```
at org.apache.cxf.phase.PhaseInterceptorChain.doIntercept(PhaseInterceptorChain.java:262)
```

```
at org.apache.cxf.endpoint.ClientImpl.doInvoke(ClientImpl.java:531)
```

```

at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:464)
at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:367)
at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:320)
at org.apache.cxf.frontend.ClientProxy.invokeSync(ClientProxy.java:89)
at org.apache.cxf.jaxws.JaxWsClientProxy.invoke(JaxWsClientProxy.java:134)
at com.sun.proxy.$Proxy54.isServerAlive(Unknown Source)
at com.micromuse.response.client.soapclient.SoapClientUtilSoapResponseServerStateMonitor$1.run(SoapClientUtil.java:364)
at java.lang.Thread.run(Thread.java:795)

```

Caused by: java.net.SocketException: SocketException invoking <https://9.48.185.2:8081/jaxws/impact/SoapResponseServerHeartbeatfc/SoapResponseServerHeartbeat>: Too many open files

```

at sun.reflect.NativeConstructorAccessorImpl.newInstance(Native Method)

```

**Diagnosing the problem:**

Use netstat to view the ESTABLISHED connections to the secure http port on the backend Impact server. By default, this will be port 9081 (one higher than the configured non-secure http port). Configured ports can be viewed in `wlp/usr/servers/<servername>/bootstrap.properties`.

```

netstat -an| grep 9081| grep ESTABLISHED| wc -l

```

**Resolution:**

This issue is planned to be resolved in an upcoming service release for Netcool/Impact 7.1.0. See APAR IV69904 for reference. Until this fix is released, it is **not** recommended to configure SSL communication between the Impact GUI Server and Impact Backend Server.

**ActiveMQ Error on DASH CP5-CP7 and FPI**

After applying the CP5 to a DASH 3.1.3 installation, eventing no longer works in our Java-based CURI data provider (SMU Automation). In Firebug, I see the following error whenever the amq request triggers:

```

https://hostxxx:16311/ibm/tivoli/amq?timeout=5000&pollInterval=5000&d=1513631116387&r=0.26271624417862727

```

**Error 404: javax.servlet.UnavailableException: SRVE0203E: Servlet [AjaxServlet]: com.ibm.tivoli.rest.amq.AjaxServlet was found, but is missing another required class.**

SRVE0206E: This error typically implies that the servlet was originally compiled with classes which cannot be located by the server.

SRVE0187E: Check your class path to ensure that all classes required by the servlet are present. SRVE0210I: This problem can be debugged by recompiling the servlet using only the classes in the application&#39;s runtime class path

```

SRVE0234I: Application class path=[/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.tivoli.rest.war/WEB-INF/lib/com.ibm.tivoli.rest.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.tivoli.rest.war/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/struts.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/struts-legacy.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/commons-beanutils.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/commons-collections.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/commons-digester.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/commons-fileupload.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/jakarta-oro.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/commons-validator.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/islite.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/cms.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/icl.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/iscportal.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/AZY_SimpleEncryption.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/launchapi.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/jdom.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.sysmgmt.util.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.usmi.console.navigator.model.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.tivoli.widget.model.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.tivoli.rest.util.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/com.ibm.tivoli.rest.util.lang.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/JSON4J.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/schema4j-0.9.2.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/activemq-web-5.13.0.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/camel-core-2.16.1.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/kahad-5.7.0.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/org.eclipse.jetty.continuation_7.1.6.v20100715.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/log4j-1.2.14.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/slf4j-api-1.7.13.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/slf4j-log4j12-1.7.13.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/activemq-broker-5.13.0.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/activemq-client-5.13.0.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/isc/ear/registration.jar:/opt/IBM/JazzSM/profile/lib/ibm-wink-jaxrs-1.0.0.jar:/opt/IBM/JazzSM/profile/lib/httpcore-4.3.3.jar:/opt/IBM/smsz/ing/lib/eezsdk.jar:/opt/IBM/smsz/ing/lib/eezutils.jar:/opt/IBM/smsz/ing/lib/eezui.jar:/opt/IBM/smsz/ing/lib/eezj2eutils.jar:/opt/IBM/smsz/ing/lib/eezdmn.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/EEZEAR.ear/eezaabclient.jar:/opt/IBM/smsz/ing/lib/eezfeeder.jar:/opt/IBM/smsz/ing/lib/eezadapter.jar:/opt/IBM/smsz/ing/lib/eezitfacade.jar:/opt/IBM/smsz/ing/lib/eezpollr.jar:/opt/IBM/smsz/ing/lib/evd.jar:/opt/IBM/smsz/ing/lib/log.jar:/opt/IBM/smsz/ing/lib/sampolicy.jar:/opt/IBM/smsz/ing/lib/tivolicommondir.jar:/opt/IBM/smsz/ing/lib/eezmsg.jar:/opt/IBM/smsz/ing/msg/eezcmmsg.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/otj.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/dt.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/ibmrootools.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/jconsole.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/tools.jar:/opt/IBM/JazzSM/profile/classes:/opt/IBM/WebSphere/AppServer/classes:/opt/IBM/WebSphere/AppServer/lib:/opt/IBM/WebSphere/AppServer/lib/COBOL/CallStubGenerator.zip:/opt/IBM/WebSphere/AppServer/lib/EJBCommandTarget.jar:/opt/IBM/WebSphere/AppServer/lib/IVTClient.jar:/opt/IBM/WebSphere/AppServer/lib/OTISConvertTime.jar:/opt/IBM/WebSphere/AppServer/lib/activation-impl.jar:/opt/IBM/WebSphere/AppServer/lib/admin.config.jobcl.jar:/opt/IBM/WebSphere/AppServer/lib/admin.config.rules.jar:/opt/IBM/WebSphere/AppServer/lib/admin.config.sched.jar:/opt/IBM/WebSphere/AppServer/lib/aspectjrt.jar:/opt/IBM/WebSphere/AppServer/lib/batch.jar:/opt/IBM/WebSphere/AppServer/lib/batchpnl.jar:/opt/IBM/WebSphere/AppServer/lib/batchprops.jar:/opt/IBM/WebSphere/AppServer/lib/batchutilsstep.jar:/opt/IBM/WebSphere/AppServer/lib/batfepapi.jar:/opt/IBM/WebSphere/AppServer/lib/bootstrap.jar:/opt/IBM/WebSphere/AppServer/lib/bsf-engines.jar:/opt/IBM/WebSphere/AppServer/lib/com.ibm.rls.jdbc.jar:/opt/IBM/WebSphere/AppServer/lib/commandlineutils.jar:/opt/IBM/WebSphere/AppServer/lib/commons-discovery.jar:/opt/IBM/WebSphere/AppServer/lib/databeans.jar:/opt/IBM/WebSphere/AppServer/lib/evd.jar:/opt/IBM/WebSphere/AppServer/lib/fdcSupport.jar:/opt/IBM/WebSphere/AppServer/lib/htmlshell.jar:/opt/IBM/WebSphere/AppServer/lib/iscdeploy.jar:/opt/IBM/WebSphere/AppServer/lib/j2ee.jar:/opt/IBM/WebSphere/AppServer/lib/jNative2ascii.jar:/opt/IBM/WebSphere/AppServer/lib/jacl.jar:/opt/IBM/WebSphere/AppServer/lib/jrom.jar:/opt/IBM/WebSphere/AppServer/lib/launcher.jar:/opt/IBM/WebSphere/AppServer/lib/improxy.jar:/opt/IBM/WebSphere/AppServer/lib/mail-impl.jar:/opt/IBM/WebSphere/AppServer/lib/openwebbeans.jar:/opt/IBM/WebSphere/AppServer/lib/pc-appext.jar:/opt/IBM/WebSphere/AppServer/lib/pmirm4arm.jar:/opt/IBM/WebSphere/AppServer/lib/rrd-appext.jar:/opt/IBM/WebSphere/AppServer/lib/rsadutils.jar:/opt/IBM/WebSphere/AppServer/lib/rsahelpers.jar:/opt/IBM/WebSphere/AppServer/lib/serviceadapter.jar:/opt/IBM/WebSphere/AppServer/lib/setup.jar:/opt/IBM/WebSphere/AppServer/lib/startup.jar:/opt/IBM/WebSphere/AppServer/lib/tcljava.jar:/opt/IBM/WebSphere/AppServer/lib/urlprotocols.jar:/opt/IBM/WebSphere/AppServer/lib/wses_dynaedg.jar:/opt/IBM/WebSphere/AppServer/lib/wsiif-compat.jar:/opt/IBM/WebSphere/AppServer/installedChannels:/opt/IBM/WebSphere/AppServer/web/help:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/com.ibm.tools.ejbdploy/runtime:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/com.ibm.tools.ejbdploy/runtime/batch.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/com.ibm.tools.ejbdploy/runtime/ejbdploy.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/com.ibm.tools.ejbdploy/runtime/ejbdmapvalide.jar:/opt/IBM/WebSphere/AppServer/derby/lib/derby.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/sib.api.jmsra.rar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.commonservices.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.connector.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.headers.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jmqi.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jmqi.local.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jmqi.remote.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jmqi.system.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.jms.admin.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mq.pcf.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.mqjms.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.commonservices.j2se.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.commonservices.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.jms.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.matchspace.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.provider.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.ref.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.wmq.common.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.wmq.factories.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/com.ibm.msg.client.wmq.v6.jar:/opt/IBM/WebSphere/AppServer/installedConnectors/wmq.jmsra.rar/dhbc.jar:/opt/IBM/JazzSM/profile/installedConnectors/eezdmnconnector.rar:/opt/IBM/JazzSM/profile/installedConnectors/eezdmnconnector.rar/_connectorModule.jar:/opt/IBM/smsz/ing/lib/eezsdk.jar:/opt/IBM/smsz/ing/lib/eezutils.jar:/opt/IBM/smsz/ing/lib/eezj2eutils.jar:/opt/IBM/smsz/ing/lib/eezdmn.jar:/opt/IBM/smsz/ing/lib/eezmsg.jar:/opt/IBM/JazzSM/profile/installedConnectors/eezflaconector.rar:/opt/IBM/JazzSM/profile/installedConnectors/eezflaconector.rar/_connectorModule.jar:/opt/IBM/smsz/ing/lib/eezadapter.jar:/opt/IBM/smsz/ing/lib/evd.jar:/opt/IBM/smsz/ing/lib/log.jar:/opt/IBM/JazzSM/profile/installedConnectors/eezpcrconnector.rar:/opt/IBM/JazzSM/profile/installedConnectors/eezpcrconnector.rar/_connectorModule.jar:/opt/IBM/smsz/ing/lib/eezpcrfacade.jar:/opt/IBM/smsz/ing/lib/csmclient.jar:/opt/IBM/smsz/ing/lib/rmmessages.jar:/opt/IBM/JazzSM/profile/installedApps/JazzSMNode01Cell/EEZEAR.ear/eezaabclient.jar:/opt/IBM/smsz/ing/lib/eezui.jar:/opt/IBM/JazzSM/profile/properties:/opt/IBM/WebSphere/AppServer/properties:/opt/IBM/WebSphere/AppServer/lib/startup.jar:/opt/IBM/WebSphere/AppServer/lib/bootstrap.jar:/opt/IBM/WebSphere/AppServer/lib/jsf-nls.jar:/opt/IBM/WebSphere/AppServer/lib/improxy.jar:/opt/IBM/WebSphere/AppServer/lib/urlprotocols.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/batchboot.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/batch2.jar:/opt/IBM/WebSphere/AppServer/java_1.7_64/lib/tools.jar]

```

In the WAS trace file, I see the following exception:  
In those log files, I also see the following error:

```

java.lang.NoClassDefFoundError: org.fusesource.hawtbuf.UTF8Buffer
at org.apache.activemq.command.ActiveMQMessage.setObjectProperty(ActiveMQMessage.java:500)
at org.apache.activemq.command.ActiveMQMessage.setObjectProperty(ActiveMQMessage.java:488)
at org.apache.activemq.command.ActiveMQMessage.setStringProperty(ActiveMQMessage.java:735)
at org.apache.activemq.advisory.AdvisoryBroker.fireAdvisory(AdvisoryBroker.java:836)
at org.apache.activemq.advisory.AdvisoryBroker.fireAdvisory(AdvisoryBroker.java:793)
at org.apache.activemq.advisory.AdvisoryBroker.fireAdvisory(AdvisoryBroker.java:788)

```

```

at org.apache.activemq.advisory.AdvisoryBroker.addConnection(AdvisoryBroker.java:122)
at org.apache.activemq.broker.BrokerFilter.addConnection(BrokerFilter.java:98)
at org.apache.activemq.broker.BrokerFilter.addConnection(BrokerFilter.java:98)
at org.apache.activemq.broker.BrokerFilter.addConnection(BrokerFilter.java:98)
at com.ibm.tivoli.rest.event.amq.security.AMQJaasAuthenticationBroker.addConnection(AMQJaasAuthenticationBroker.java:70)
at org.apache.activemq.broker.MutableBrokerFilter.addConnection(MutableBrokerFilter.java:103)
at org.apache.activemq.broker.TransportConnection.processAddConnection(TransportConnection.java:818)
at org.apache.activemq.command.ConnectionInfo.visit(ConnectionInfo.java:139)
at org.apache.activemq.broker.TransportConnection.service(TransportConnection.java:339)
at org.apache.activemq.broker.TransportConnection$1.onCommand(TransportConnection.java:188)
at org.apache.activemq.transport.ResponseCorrelator.onCommand(ResponseCorrelator.java:116)
at org.apache.activemq.transport.MutexTransport.onCommand(MutexTransport.java:50)
at org.apache.activemq.transport.vl.VMTransport.iterate(VMTransport.java:271)
at org.apache.activemq.thread.PooledTaskRunner.runTask(PooledTaskRunner.java:133)
at org.apache.activemq.thread.PooledTaskRunner$1.run(PooledTaskRunner.java:48)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1157)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:627)
at java.lang.Thread.run(Thread.java:798)

```

This issue has been fixed in DASH 3.1.3.2 (FP2).

If you have a DASH before FP2, i.e. CP5-CP7 and FP1. Instructions to fix the issue as following.

Note : Please take backup of following files, before applying this patch

```

<JAZZSM_HOME>/profile/installedApps/JazzSMNode01Cell/isc.ear/com.ibm.tivoli.rest.war/META-INF
<JAZZSM_HOME>/profile/installedApps/JazzSMNode01Cell/isc.ear/tip.charts.war/META-INF
<JAZZSM_HOME>/profile/config/cells/JazzSMNode01Cell/applications/isc.ear/deployments/isc/tip.charts.war/META-INF
<JAZZSM_HOME>/profile/config/cells/JazzSMNode01Cell/applications/isc.ear/deployments/isc/com.ibm.tivoli.rest.war/META-INF

```

Step 1: Stop JazzSM server.

Step 2: Extract hawtbuf-1.11.jar from activemq Binary Distributions - such as [5.15.8](#).

Step 3: Copy hawtbuf-1.11.jar from activemq Binary Distributions and paste under following directories

```

<JAZZSM_HOME>/profile/installedApps/JazzSMNode01Cell/isc.ear

```

Step 4: Open below MANIFEST.MF files in edit mode and add "hawtbuf-1.11.jar" at the end and save the changes

```

<JAZZSM_HOME>/profile/installedApps/JazzSMNode01Cell/isc.ear/com.ibm.tivoli.rest.war/META-INF/MANIFEST.MF
<JAZZSM_HOME>/profile/installedApps/JazzSMNode01Cell/isc.ear/tip.charts.war/META-INF/MANIFEST.MF
<JAZZSM_HOME>/profile/config/cells/JazzSMNode01Cell/applications/isc.ear/deployments/isc/tip.charts.war/META-INF/MANIFEST.MF
<JAZZSM_HOME>/profile/config/cells/JazzSMNode01Cell/applications/isc.ear/deployments/isc/com.ibm.tivoli.rest.war/META-INF/MANIFEST.MF

```

Example :

Before:

```

Manifest-Version: 1.0
Ant-Version: Apache Ant 1.7.1
Created-By: 2.4 (IBM Corporation)
Class-Path: com.ibm.usmi.console.navigator.model.jar com.ibm.sysmgmt.u
tils.jar com.ibm.tivoli.rest.utils.jar activemq-broker-5.13.0.jar act
ivemq-client-5.13.0.jar activemq-web-5.13.0.jar camel-core-2.16.1.jar
jetty-util-6.1.9.jar JSON4J.jar jschema4j-0.9.2.jar com.ibm.tivoli.w
idget.model.jar registration.jar jdom.jar

```

After :

```

Manifest-Version: 1.0
Ant-Version: Apache Ant 1.7.1
Created-By: 2.4 (IBM Corporation)
Class-Path: com.ibm.usmi.console.navigator.model.jar com.ibm.sysmgmt.u
tils.jar com.ibm.tivoli.rest.utils.jar activemq-broker-5.13.0.jar act
ivemq-client-5.13.0.jar activemq-web-5.13.0.jar camel-core-2.16.1.jar
jetty-util-6.1.9.jar JSON4J.jar jschema4j-0.9.2.jar com.ibm.tivoli.w
idget.model.jar registration.jar jdom.jar hawtbuf-1.11.jar

```

Step 5: Start server.

Step 6: Clear browser cache and then log-in to DASH console.

## Migration issues

### The migration script does not allow the import of two instances to 7.1

If you are running two Netcool/Impact instances on one Impact installation for 5.x or 6.x and you want to migrate to 7.1, you cannot do a direct migration of both instances. The instances must be migrated into individual Netcool/Impact installations on 7.1

Important: You can still access both instances with one GUI server. However, the two instances are not located under the one \$IMPACT\_HOME directory on Netcool/Impact 7.1.

Use the following scenario as an example. Netcool/Impact 6.1 is installed to /opt/IBM/tivoli/impact and within that \$IMPACT\_HOME directory you have two Impact instances, NCI\_A and NCI\_B. You want to migrate NCI\_A and NCI\_B to Netcool/Impact 7.1. Use the following steps to complete this scenario.

1. Install two Netcool/Impact 7.1 servers to match the two instances you have in 5.x or 6.x, for example, NCI\_A and NCI\_B.
2. Export all the data, by using the following command.

```

migrate.sh -export61to71 <old NCHOME directory> <export directory>
-password61 <Impact 6.1 password>

```

3. Make copy of the <export directory> so you have two identical directories, expNCI\_A and expNCI\_B.
4. In the expNCI\_A directory, delete the following files impact/etc/NCI\_B \* files and impact/policies/NCI\_B \* files
5. In the expNCI\_B directory, delete the following files impact/etc/NCI\_A \* files and impact/policy/NCI\_A \* files.
6. Go to the NCI\_A Netcool/Impact 7.1 installation and run the following migration import script.

```

migrate.sh -import61to71 <new NCI_A IMPACT_HOME directory> <expNCI_A dir>
-password71 <Impact 7.1 password>

```

- a. Remove from SVN, all artifacts from the NCI\_B Netcool/Impact instance by running the following command.

```

<new NCI_A IMPACT_HOME >/bin/nci_svn_remove NCI_B

```

- b. Delete the local copies of the NCI\_B files in <new NCI\_A IMPACT\_HOME>/etc/ and <new NCI\_A IMPACT\_HOME>/policy/.

7. Go to the NCI\_B Netcool/Impact 7.1 installation and run the migration import script.

```

migrate.sh -import61to71 <new NCI_B IMPACT_HOME directory>

```

```
<expNCI_B_dir> -password71 <Impact 7.1 password>
```

a. Remove from SVN all artifacts for the NCI\_A Impact instance by running the following command.

```
<new NCI_B IMPACT_HOME >/bin/nci_svn_remove NCI_A
```

b. Delete the local copies of NCI\_A files in <new NCI\_B IMPACT\_HOME>/etc/ and <new NCI\_B IMPACT\_HOME>/policy/.

8. Stop both Impact 7.1 servers by using the following command.

```
<new IMPACT_HOME>/bin/stopImpactServer.sh
```

9. Check and update the `server.props` file on both servers, if required:

```
execute <new IMPACT_HOME>/bin/nci_crypt <password 7.1>
```

Ensure the encrypted password string output from `nci_crypt` matches the output in the `server.props` file

```
<new IMPACT_HOME>/etc/server.props file
```

10. Start both servers by using the following command.

```
<new IMPACT_HOME >/bin/startImpactServer.sh
```

---

## The message "JAVA\_HOME is not defined correctly" gets displayed when running the migrate script

### Symptom

When you run the migrate script (.sh or .bat) with parameters, the message "JAVA\_HOME is not defined correctly" gets displayed.

### Cause

The supplied parameters to the migration script didn't match any of the expected values.

### Resolution

Ensure that the parameters supplied to the migrate script exactly match what it expects. Check the accepted parameters by providing the `-help` option to the script. Ex: `IMPACT_HOME/install/migration/migrate.sh -help`

## Network and connectivity issues

### ActiveMQ Port conflict when JazzSM and Impact are on the same machine

#### Symptom

Symptoms are intermittent and varied. They include:

1. Logout from JazzSM is unresponsive.

2. JazzSM does not respond to `stopServer.sh` command.

3. Errors seen in Websphere or Liberty logs: `ERROR [Default Executor-thread-9] (BrokerService.java:621) - Failed to start Apache ActiveMQ ([ActiveMQBroker, null], java.io.IOException: Failed to bind to server socket: nio://0.0.0.0:16324 due to: java.net.BindException: Address already in use).`  
`java.io.IOException: Failed to bind to server socket: nio://0.0.0.0:16324 due to: java.net.BindException: Address already in use`

Logs files are `ImpactUI/logs/messages.log`

4. Connectivity sluggishness on Impact UI.

#### Cause

JazzSM and Impact are listening on the same ActiveMQ Port: 16324.

The issues occurs when **all** the conditions below are met:

- 1) JazzSM and Impact are installed on the same machine.
- 2) JazzSM and Impact are running at the same time. Symptoms vary depending on which one starts first.
- 3) JazzSM is installed using default port range - i.e. starting with port 16310 and with 16324 for ActiveMQ.

#### Resolution

1. Create a new text file called `ActiveMQBroker.properties` and place it under the Impact install. Take note of the directory path for the new file.

Use the `ActiveMQBroker.properties` sample below, or copy the file from a JazzSM install i.e. from `/opt/IBM/JazzSM/ui/properties/ActiveMQBroker.properties`

The important point to note is that the port used for `ActiveMQBroker.transportConnectorURIs` property, in this file, must **not** be 16324. Pick an unused port - i.e. 16399, or any unused port.

Sample: `ActiveMQBroker.properties`

```
ActiveMQBroker.brokerName=ActiveMQBroker
ActiveMQBroker.persistent=false
```

```

ActiveMQBroker.useJmx=false
ActiveMQBroker.transportConnectorURIs=nio://0.0.0.0:16399
ActiveMQBroker.mc.createConnector=false
ActiveMQBroker.useShutdownHook=false
// Configurable properties, can be modified:
// timeout: the number of seconds to wait for events
ActiveMQBroker.timeout=5
// pollDelay: the number of seconds to wait before next poll
ActiveMQBroker.pollDelay=25
// pollErrorDelay: the number of seconds to wait after an error before next poll
ActiveMQBroker.pollErrorDelay=5
// totalMemoryLimit: the maximum amount of memory allowed for ActiveMQ messages
ActiveMQBroker.totalMemoryLimit=20971520
// queueMemoryLimit: the maximum amount of memory allowed for ActiveMQ messages
ActiveMQBroker.queueMemoryLimit=524288
-----

```

2. Update `<impact install location>/wlp/usr/servers/<ImpactUI Server>/apps/ImpactUI.ear/com.ibm.tivoli.rest.war/WEB-INF/web.xml` and set the ActiveMQServlet port to the same new port as above.

```

<!-- ActiveMQServlet -->
<context-param>
<param-name>org.apache.activemq.brokerURL</param-name>
<param-value>nio://localhost:16399</param-value>
</context-param>
<context-param>
<param-name>brokerURL</param-name>
<param-value>nio://localhost:16399</param-value>
</context-param>

```

3. Edit the bootstrap.properties files for the Impact UI server, i.e. typically located here:  
`/opt/IBM/tivoli/impact/wlp/usr/servers/ImpactUI/bootstrap.properties`

Add a new property `com.ibm.tivoli.rest.utils.BROKER_PROPS_HOME` to this file, to specify a directory for the new ActiveMQBroker.properties file.

i.e. if the file is here: `/opt/IBM/tivoli/impact/ActiveMQBroker.properties`, add the following line:

```
com.ibm.tivoli.rest.utils.BROKER_PROPS_HOME=/opt/IBM/tivoli/impact
```

4. Restart Impact UI Server.

```

$IMPACT_HOME/bin/stopGUIServer.sh
$IMPACT_HOME/bin/startGUIServer.sh

```

**Aside:** the above is for when you want to change the activeMQ port in **Impact**. However, if changing the port on the JazzSM side more is required - the port needs to change in one of the applications.

## Impact 7.1 - Connecting to MySQL database through ODBC

### Symptom

Unable to connect to MySQL Data-Source using ODBC, resulting in error message:

```

'/opt/IBM/tivoli/impact/wlp/usr/servers/NCI/logs/messages.log':
[12/4/14 11:05:07:807 GMT] 000002e0 SystemErr
      R Unable to load JdbcOdbc
library:java.sql.SQLException: Unable to load JdbcOdbc library

```

### Resolution

Set the environment variable `LD_PRELOAD` to `/usr/lib64/libodbc.so` in the shell Impact is started from or in the system.

For example:

```
export LD_PRELOAD=/usr/lib64/libodbc.so (the location might vary, depending on the UNIX flavour and the 32/64bit type)
```

in the shell Impact was started from (startImpactServer). Impact server would have to be restarted if it was already running for this change to take affect.

## Netcool/Impact GUI errors are displayed after you view the Cluster status page

### Symptom

Occurs when the Impact server and the GUI server are on the same host.

If you log in to the Netcool/Impact GUI, and the Cluster status page on the same browser session, for example <https://localhost:16311/ibm/console> and <https://localhost:9080/nameserver/services>

Error messages such as `internal server error` or `access forbidden` are displayed in the Netcool/Impact GUI.

### Resolution

Close the Cluster status page. Log out of Netcool/Impact then log back in.

---

## GUI tabs display blank lists

### Symptom

The Policy, Data Model, Services, and Operator View tabs show an empty list when you switch from one tab to another. In some instances, the Loading in-progress dialog remains stuck on-screen. This issue occurs when the network, server, or client systems are performing slowly or are under a heavy load.

### Resolution

Refresh the Netcool/Impact GUI browser.

---

## SLO reports and Tivoli Common Reporting test connection error

### Symptom

An error occurs with Tivoli Common Reporting when you connect to the SLO reports data source. The error message appears in the logs.

[http://panchax.tivlab.austin.ibm.com:8808/help/topic/com.ibm.netcoolimpact.doc7.1/solution/lmsg\\_slo\\_install\\_and\\_enable\\_extensions\\_t.html](http://panchax.tivlab.austin.ibm.com:8808/help/topic/com.ibm.netcoolimpact.doc7.1/solution/lmsg_slo_install_and_enable_extensions_t.html)

```
QE-DEF-0285 The logon failed.
QE-DEF-0325 The logon failed for the following reason:
RQP-DEF-0068 Unable to connect to at least one database during a multi-database
attach to 1 database(s) in:
    testDataSourceConnection

UDA-SQL-0569 Unable to load the driver manager library ( libdb2.so ).
UDA-SQL-0571 The operating system returned an error message ( libdb2.so: cannot open
shared object file: No such file or directory ).
BME-EX-0144 Trace back:
BmtPlayTransaction.cpp(738): QFException: CCL_RETHROW: BmtPlayTransaction::DoAction
BmtActionsHelper.cpp(466): QFException: CCL_RETHROW: BmtActionsHelper::DoAction
QFSSession.cpp(630): QFException: CCL_RETHROW: QFSSession::ProcessDoRequest()
QFSSession.cpp(628): QFException: CCL_CAUGHT: QFSSession::ProcessDoRequest()
QFSSession.cpp(1380): QFException: CCL_RETHROW: QFSSession::
SessionProcessTestConnection()
Source/QE_RsApi.cpp(2064): QFException: CCL_RETHROW: QE
Source/QEI_ConnectionFault.cpp(807): QFException: CCL_THROW: QE
```

### Cause

Tivoli Common Reporting is unable to locate the 32-bit DB2 client libraries.

### Resolution

1. Add the DB2 lib32 directory /opt/ibm/db2/lib32 to the top of the configuration file /etc/ld.so.conf. For example:

```
[root@impactJazzSM lib32]# cat /etc/ld.so.conf
/opt/ibm/db2/lib32
include ld.so.conf.d/*.conf
[root@impactJazzSM lib32]#
```

2. Run the `ldconfig` command to regenerate the dynamically linked libraries.
  3. Restart the Jazz for Service Management server profile.
  4. Try connection again.
- 

## JMS error when the test connection button is clicked multiple times

When a JMS data source is created with faulty configuration and the Test Connection button is clicked multiple times, the JMS displays an error.

### Symptom

When the Test Connection button is clicked multiple times, JMS displays a misleading error `com.micromuse.common.datasource.JMSDataSourceException: Too many pending JMS Connections, cannot proceed.`

### Cause

The JMS data source is created with faulty configuration.

### Resolution

Correct the configuration and restart the server. For more information about JMS configuration, see *JMS data source configuration properties* in the User Interface Guide.

---

## Connection error in JRExec server

JRExec server fails to connect and shows the following error: `java.net.ConnectException: Connection refused.`

### Symptom

Using the JRExecAction function within a policy is results in an error:

```
'An exception occurred while executing Policy.
Please examine server.log for more details
or check the Policy. The exception was:
Exception in policy: . Exception in policy.
Error while executing external action:
Could not connect to server: java.rmi.ConnectException:
Connection refused to host: localhost;
nested exception is: java.net.ConnectException:
Connection refused'
```

### Resolution

These are typical exceptions that occur when the nci\_jreexec is not running. To address this issue, start the JRExec process, by running the following command:

```
$IMPACT_HOME/bin/nci_jreexec
```

---

### Compiling nci\_compliewsdll causes exception errors

How to resolve nci\_compliewsdll exception errors.

#### Symptoms

Compiling the nci\_compliewsdll script causes exception errors similar to the following examples:

```
Exception in thread "main" java.lang.Exception: Could not find WSDL compiling output jar file
nci_compilewsdl: Failed to compile wsdl [Filename.wsdl] (error 1)
```

#### Resolution

Repeat the process in an environment with internet access to compile the script correctly.

---

### Impact server binding to the wrong interface on a multi-networked machine

When you are installing Netcool/Impact on a computer with multiple network interfaces, the Netcool/Impact server might not bind to the same interface as the nameserver.

#### Symptoms

The Netcool/Impact server becomes inaccessible.

#### Resolution

There is an additional parameter that you have to use when the server is configured in this way. In the `<server name>_server.props` file, add the following parameter:

```
impact.server.ipaddress=<ipaddress>
```

for each interface that you need the server to bind to.

---

### IP Multipathing support in Impact

IP Multipathing is used for network card failure. For example, if you are using 2 Network Interface Cards, and one fails, the application uses the remaining card.

#### Resolution

IP Multipathing is not supported on Impact.

---

### Internal error on Sybase and the ObjectServer DSA in Impact

The columns of the Sybase database or the ObjectServer database fail resulting in an error message indicating that the columns are "DEAD".

#### Symptoms

The following messages appear in the `impactserver.log` file:

```
ERROR [Debug] java.sql.SQLException: JZ006:
Caught IOException: java.io.IOException:JZ0R3:Column is DEAD.
This is an internal error; please report it to Sybase technical support.
```

#### Resolution

1. Stop the Impact server
2. Back up and edit the `$IMPACT_HOME/etc/<serverName>_<datasourceName>.ds` file.
3. Add the following to the end of the `.ds` file:
  - o For ObjectServer DSAs:

```
<datasourceName>.ObjectServer.NUMDSPROPERTIES=1
<datasourceName>.ObjectServer.DSPROPERTY.1.NAME=REPEAT_READ
<datasourceName>.ObjectServer.DSPROPERTY.1.VALUE=true
```

- o For the Sybase DSAs:

```
<datasourceName>.Sybase.NUMDSPROPERTIES=1
<datasourceName>.Sybase.DSPROPERTY.1.NAME=REPEAT_READ
<datasourceName>.Sybase.DSPROPERTY.1.VALUE=true
```

Replace `<datasourceName>` with the actual name.

4. Restart the Impact server.

Note: You must manually add these properties to all of your Impact Cluster members, as they will not replicate these new properties to your other cluster members.

---

### SNMP DSA is not sending traps

The SNMP DSA is not able to send traps because the Management Information Base (MIB) file is corrupted.

#### Symptoms

You are unable to run a policy to send traps.

#### Cause

The MIB file corrupted.

#### Resolution

Check your MIB file with a MIB Browser tool before you place the MIB in the \$IMPACT\_HOME/dsa/snmpdsa/mibs directory. This ensures that the MIB is not corrupted.

---

### Test connection database error CTGBA0024E

How to resolve a failed data source connection to the DB2 database that is running on z/OS.

#### Symptoms

You might receive the following error when you try to create a data source to access a remote DB2 database that is running on z/OS.

```
CTGBA0024E The test connection was not opened.  
Reason: Could not connect to databases.
```

#### Cause

The JDBC driver and license .jar files from the source DB2 database might not be accessible by the Impact Server.

#### Resolution

1. Install the DB2 Connect client on a distributed system.
  2. Copy the db2jcc.jar and db2jcc\_license\*.jar files from your \$SQLLIB/java directory where the DB2 database is installed, into the \$IMPACT\_HOME/dsalib directory on the Impact Server. The JAR files must be at the same version level or higher than the z/OS DB2 instance that you are connecting to.
  3. Restart the Impact Server.
- 

### Web services library directory getting corrupted while replicating

The WSDL file created for web services does not replicate properly from the primary to the secondary server.

#### Symptoms

The jar file created for web services gets corrupted while replicating from the primary to the secondary server.

#### Resolution

To compile the WSDL, you perform the following tasks:

- Obtain the WSDL file for the Web service.
- Run the WSDL compiler script.
- The jar files are created in the \$IMPACT\_HOME/wslib directory on the primary server. Copy the jar files from the \$IMPACT\_HOME/wslib directory to all the secondary servers.
- After compiling the WSDL file either from the wizard or the nei\_compile WSDL command, the files need to be copied to all the secondary servers. If an existing package file is recompiled, you need to copy the jar files to all the secondary servers and restart the Netcool/Impact instances.

Note: If the WSDL file contains XSD imports, these files are provided separately. The WSDL files and related XSD files must be placed in a directory with no spaces.

---

### ORACLE DSA DOES NOT CONFIGURE WITH ORACLE ALIAS

Impact uses a JDBC driver to establish communications with 3rd party databases.

Impact does not require tnsnames.ora or any other similar file to be configured by the customer.

All configuration is done in the Impact Data Model UI.(Host/port/SID/username/password etc).

---

### Web services error that can be ignored

The addressingNamespace error shown below is not harmful. It is coming from the deployer in apache which is trying to add naming handler that is not used in the wss file and it is not needed. Hence, it can be ignored.

```
00000028 ModuleDeployer E org.apache.axis2.deployment.ModuleDeployer deploy The addressing-1.3.mar module, which is not valid, caused addressingNamespace  
java.lang.NoSuchFieldError: addressingNamespace  
at org.apache.axis2.handlers.addressing.AddressingFinalInHandler.<init>(AddressingFinalInHandler.java:41)  
at sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method)  
at sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:39)  
at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:27)  
at java.lang.reflect.Constructor.newInstance(Constructor.java:513)  
at java.lang.Class.newInstance0(Class.java:355)  
at java.lang.Class.newInstance(Class.java:308)  
at org.apache.axis2.deployment.util.Utils$1.run(Utils.java:94)  
at org.apache.axis2.java.security.AccessController.doPrivileged(AccessController.java:132)
```

```

at org.apache.axis2.deployment.util.Utils.addFlowHandlers(Utils.java:90)
at org.apache.axis2.deployment.DeploymentEngine.addNewModule(DeploymentEngine.java:469)
at org.apache.axis2.deployment.ModuleDeployer.deploy(ModuleDeployer.java:74)
at org.apache.axis2.deployment.repository.util.DeploymentFileData.deploy(DeploymentFileData.java:136)
at org.apache.axis2.deployment.DeploymentEngine.doDeploy(DeploymentEngine.java:597)
at org.apache.axis2.deployment.RepositoryListener.init(RepositoryListener.java:237)
at org.apache.axis2.deployment.RepositoryListener.init2(RepositoryListener.java:68)
at org.apache.axis2.deployment.RepositoryListener.<init>(RepositoryListener.java:63)
at org.apache.axis2.deployment.DeploymentEngine.loadRepository(DeploymentEngine.java:147)
at org.apache.axis2.deployment.FileSystemConfigurator.getAxisConfiguration(FileSystemConfigurator.java:133)
at org.apache.axis2.context.ConfigurationContextFactory.createConfigurationContext(ConfigurationContextFactory.java:68)
at org.apache.axis2.context.ConfigurationContextFactory.createConfigurationContextFromFileSystem(ConfigurationContextFactory.java:184)
at com.micromuse.common.parser.internal.core.functions.WebServiceInvokeDLFunction.runCompute(WebServiceInvokeDLFunction.java:261)
at com.micromuse.common.parser.FunctionImpl.compute(FunctionImpl.java:56)
at com.micromuse.common.parser.internal.core.PolicyParserInterpreterVisitor.visit(PolicyParserInterpreterVisitor.java:942)
at com.micromuse.response.common.parser.AbstractPolicyParserInterpreterVisitor.visit(AbstractPolicyParserInterpreterVisitor.java:303)
at com.micromuse.response.common.parser.IPLImpactNoActionInterpreterVisitor.visit(IPLImpactNoActionInterpreterVisitor.java:171)
at com.micromuse.common.parser.internal.core.ASTFunctionCall.jjtAccept(ASTFunctionCall.java:17)
at com.micromuse.common.parser.internal.core.PolicyParserInterpreterVisitor.visit(PolicyParserInterpreterVisitor.java:167)
at com.micromuse.response.common.parser.AbstractPolicyParserInterpreterVisitor.visit(AbstractPolicyParserInterpreterVisitor.java:147)
at com.micromuse.common.parser.internal.core.ASTAssignment.jjtAccept(ASTAssignment.java:17)
at com.micromuse.common.parser.internal.core.PolicyParserInterpreterVisitor.visit(PolicyParserInterpreterVisitor.java:807)
at com.micromuse.response.common.parser.AbstractPolicyParserInterpreterVisitor.visit(AbstractPolicyParserInterpreterVisitor.java:393)

```

### Error message when error in .jks file for web services

If the following error message appears in the SystemOut.log file, it means there is an error with the .jks file for web services.

In that case, IBM support needs to find from the customer

- 1) The exact command used to create the .jks file.
- 2) Does the user in the wss.xml file match the user the server is requesting to authenticate?

```

0000002a CryptoFactory E org.apache.ws.security.components.crypto.CryptoFactory loadClass Unable to instantiate (1): org.apache.ws.security.components.crypto.Merlin
java.lang.reflect.InvocationTargetException
at sun.reflect.NativeConstructorAccessorImpl.newInstance(Native Method)
at sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:39)
at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:27)
at java.lang.reflect.Constructor.newInstance(Constructor.java:513)
at org.apache.ws.security.components.crypto.CryptoFactory.loadClass(CryptoFactory.java:211)
at org.apache.ws.security.components.crypto.CryptoFactory.getInstance(CryptoFactory.java:176)
at org.apache.ws.security.handler.WSHandler.loadEncryptionCrypto(WSHandler.java:396)
at org.apache.ws.security.handler.WSHandler.doSenderAction(WSHandler.java:140)
at org.apache.rampart.handler.WSDoAllSender.processBasic(WSDoAllSender.java:201)
at org.apache.rampart.handler.WSDoAllSender.processMessage(WSDoAllSender.java:64)
at org.apache.rampart.handler.WSDoAllHandler.invoke(WSDoAllHandler.java:72)
at org.apache.axis2.engine.Phase.invoke(Phase.java:318)
at org.apache.axis2.engine.AxisEngine.invoke(AxisEngine.java:360)
at org.apache.axis2.engine.AxisEngine.send(AxisEngine.java:525)
at org.apache.axis2.description.OutInAxisOperationClient.send(OutInAxisOperation.java:401)
at org.apache.axis2.description.OutInAxisOperationClient.executeImpl(OutInAxisOperation.java:228)
at org.apache.axis2.client.OperationClient.execute(OperationClient.java:163)
at opdingprovider.DiagnosticsManagementProviderServiceStub.executeDiagnostics(DiagnosticsManagementProviderServiceStub.java:241)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:39)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:597)
at com.micromuse.common.parser.internal.core.functions.WebServiceInvoker$1.call(WebServiceInvoker.java:72)
at java.util.concurrent.FutureTask$Sync.innerRun(FutureTask.java:303)
at java.util.concurrent.FutureTask.run(FutureTask.java:138)
at java.util.concurrent.Executors$RunnableAdapter.call(Executors.java:439)
at java.util.concurrent.FutureTask$Sync.innerRun(FutureTask.java:303)
at java.util.concurrent.FutureTask.run(FutureTask.java:138)
at com.micromuse.common.util.concurrent.TrackingExecutor$1.run(TrackingExecutor.java:105)
at java.util.concurrent.ThreadPoolExecutor$Worker.runTask(ThreadPoolExecutor.java:895)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:918)
at java.lang.Thread.run(Thread.java:682)
Caused by: org.apache.ws.security.components.crypto.CredentialException: Failed to load credentials. Inner Exception: [jks not found]
at org.apache.ws.security.components.crypto.AbstractCrypto.load(AbstractCrypto.java:144)
at org.apache.ws.security.components.crypto.AbstractCrypto.<init>(AbstractCrypto.java:97)
at org.apache.ws.security.components.crypto.Merlin.<init>(Merlin.java:65)

```

### ConfAuth4OMNibus script fails with connection refused error at the updatePlugins step

The ConfAuth4OMNibus script fails with connection refused error at the updatePlugins step. This also applies to the ConfAuth4LDAP script.

#### Symptoms

Script fails with connection refused error at the updatePlugins step

```

updatePLUGINS:
[echo] Updating plugin registration
[echo] Run command java -jar
/opt/IBM/tivoli/impact/cli/cli.jar -
deletePlugin Preferences -pluginurl_username impactadmin -
pluginurl_password xxxxxx -consoleRest https://localhost:
16311/ibm/console/rest -username impactadmin -password xxxxxx
[java] Deleting a plugin.
[java] Error during request:
[java] java.net.ConnectException: Connection refused

```

#### Cause

UpdatePlugins step was not able to resolve the localhost.

#### Resolution

The workaround is to set the alias for localhost in the /etc/hosts to the hostname of the server and then have the ipaddress correspond to that hostname or in case of multiple NICs on that host, have the ipaddress that is used to install Impact correspond to the hostname.

### Multi-threading issue when decrypting passwords

The following error can be seen with 7.1.0 FP12 and FP13 and will be resolved in IJ07564 with 7.1.0 FP14.

#### Symptoms

The following error may be seen in the impactserver.log file.

```
ERROR [AdvancedEncryptionStandardStrategy] Unable to perform decryption of input value: '12B143F16586CBF321E9ACDB8A52FF3D'  
java.lang.ArrayIndexOutOfBoundsException: Array index out of range: -16  
    at com.ibm.crypto.fips.provider.at.a(Unknown Source)  
    at com.ibm.crypto.fips.provider.at.engineUpdate(Unknown Source)  
    at com.ibm.crypto.fips.provider.at.b(Unknown Source)  
    at com.ibm.crypto.fips.provider.at.engineDoFinal(Unknown Source)  
    at javax.crypto.Cipher.doFinal(Unknown Source)  
    at com.micromuse.common.util.crypto.AdvancedEncryptionStandardStrategy.decrypt(AdvancedEncryptionStandardStrategy.java:205)  
    at com.micromuse.common.util.crypto.AdvancedEncryptionStandardStrategy.decrypt(AdvancedEncryptionStandardStrategy.java:177)  
    at com.micromuse.common.util.crypto.AdvancedEncryptionStandardStrategy.decrypt(AdvancedEncryptionStandardStrategy.java:194)
```

#### Cause

A change in JRE version shipped in 7.1.0 FP12 means that this error is exposed.

#### Resolution

The problem will be resolved in IJ07564 with 7.1.0 FP14. If a test fix is needed earlier, please contact the support team.

## Operator View Issues

#### Symptom

Operator View crashes. The following exception is generated: ERROR [SoapManagerFacadeImpl] Could not run policy Opview\_policy  
com.micromuse.response.common.PolicyProcessingException: Unhandled Exception: ERROR=Object not found on line 1 of statement 'SELECT ...

#### Cause

Impact Server runs out of memory. When an operator view is set to return tabs or table of info from a data type that returns 1000s of rows, the Operator View gets stuck trying to return too many rows and crashes the Impact server.

#### Resolution

This issue is not specific to OpViews. The policy functions GetByFilter/GetByKey don't automatically limit the number of returns based on available memory. The resolution is to only run SQL for an amount of data less than the max heap allotted to Impact.

## Performance Issues

### Impact Server CPU Spikes

#### Symptom

The CPU on the Impact CPU reaches 100% utilization.

#### Cause

An infinite loop in an Impact policy can cause this situation.

#### Resolution

Use the following steps to try and isolate which policy is the culprit

1. Set autostart for all event readers to false
2. Restart the Tivoli Netcool Impact Server
3. Start the events readers, one at a time, manually, checking for CPU usage after each start.

If the above is not helpful, then using the top -H command will show which thread is using the most CPU. A javacore will show the java stack trace for all threads and thus the offending policy can be discovered.

To break down cpu per thread, use top -H <PID>

top -H -p <process pid>

The command will show the threads usage for each thread that started for the process pid.

```

Cpu(s): 42.2%us, 3.9%sy, 0.0%ni, 53.2%id, 0.0%wa, 0.0%hi, 0.6%st,
Mem: 8057576k total, 6998332k used, 1059244k free, 372776k buffers,
Swap: 2097144k total, 49540k used, 2047604k free, 3672864k cached

```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
10912	netcool	20	0	3425m	1.7g	58m	S	1.6	21.7	0:07.01	java
11303	netcool	20	0	3425m	1.7g	58m	R	1.6	21.7	0:03.70	java
11308	netcool	20	0	3425m	1.7g	58m	R	1.6	21.7	0:03.99	java
11309	netcool	20	0	3425m	1.7g	58m	S	1.6	21.7	0:04.77	java
11320	netcool	20	0	3425m	1.7g	58m	S	1.6	21.7	0:04.77	java
11498	netcool	20	0	3425m	1.7g	58m	R	1.6	21.7	0:03.58	java
11306	netcool	20	0	3425m	1.7g	58m	R	1.3	21.7	0:04.44	java
11310	netcool	20	0	3425m	1.7g	58m	S	1.3	21.7	0:04.53	java
11316	netcool	20	0	3425m	1.7g	58m	R	1.3	21.7	0:03.96	java
11317	netcool	20	0	3425m	1.7g	58m	S	1.3	21.7	0:04.31	java
11332	netcool	20	0	3425m	1.7g	58m	R	1.3	21.7	0:04.33	java
11333	netcool	20	0	3425m	1.7g	58m	S	1.3	21.7	0:04.81	java
11791	netcool	20	0	3425m	1.7g	58m	S	1.0	21.7	0:01.72	java
21656	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	20:36.54	java
21920	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	13:24.77	java
22186	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	19:37.87	java
22187	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	10:23.45	java
22428	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	13:50.31	java
22429	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	20:54.47	java
22736	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	17:27.29	java
23150	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	21:14.18	java
23151	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	21:59.79	java
23556	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	23:00.44	java
23557	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	20:41.47	java
23558	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	20:51.83	java
11319	netcool	20	0	3425m	1.7g	58m	R	0.6	21.7	0:04.34	java
11321	netcool	20	0	3425m	1.7g	58m	S	0.6	21.7	0:03.73	java
11324	netcool	20	0	3425m	1.7g	58m	R	0.6	21.7	0:04.10	java
21644	netcool	20	0	3425m	1.7g	58m	S	0.3	21.7	25:52.80	java
22737	netcool	20	0	3425m	1.7g	58m	S	0.3	21.7	20:17.47	java
11304	netcool	20	0	3425m	1.7g	58m	S	0.3	21.7	0:04.69	java

Unfortunately some versions of top -H command don't show the thread names - just the native ID of the thread, in the PID column. The output shows which threads are using the most CPU in the TIME+ column, but to know which thread the ID corresponds to, a matching java core is required. java cores can be created using kill -QUIT for the java process.

The Java Code prints the NID (Native ID) in Hex, which can be converted to decimal to match with the PID reported in top -H

```

3XMTTHREADINFO      "Thread-20" J9VMThread:0x0000000819B5800, j9thread_t:0x00007F96B4D4A080, java/lang/Thread:0x000000001D29F20, state:CW, prio=5
3XMJAVALTHREAD      (java/lang/Thread getId:0x1E, isDaemon:true)
3XMTTHREADINFO1     (native thread ID:0x5402, native priority:0x5, native policy:UNKNOWN)

```

An example of a policy with an infinite loop is below:

Even if the while loop is inside else statement, as soon as Num because 2 , the policy will enter an infinite loop; notes in **bold**

```

Num = length(EscDB);
//Means that there is no L1 standby User configured
if (Num == 0) {
    L1Standby = 'None';
}
elseif (Num == 1)
{ //Only 1 L1 Standby User configured
    L1Standby = EscDB[0].UserID;
}
else
{ //More than one user configured as L1 standby....
    // Assign the first value (preceeding the comma)

//Here Num = 2
    c = 1;
    L1Standby = EscDB[0].UserID;
    while (c < Num) { //condition is true and enters the block of code

        L1Standby = L1Standby+" "+EscDB[0].UserID;
        //before existing the loop c is still 1 and never incremented , hence loop again until c is at least 2 which never happens, hence infinite waiting
    }
    c = c + 1;
}

```

//correct code should be:

```

c = 1;
L1Standby = EscDB[0].UserID;
while (c < Num) { //condition is true and enters the blocks

    L1Standby = L1Standby+" "+EscDB[0].UserID;

    c = c + 1; // c is incremented to 2

//before existing the loop c is 2 which makes the condition false, hence exist the loop
}

```

## Policy logger issues

### The policy log viewer window is not updating

#### Symptom

The policy logger is not producing any output or the log viewer is returning multiple duplicates of the same output statement.

#### Resolution

Ensure the system times for the GUI server and cluster servers are synchronized. A time drift between the servers can result in erratic output in the policy logger.

## Policy logger not showing content

### Symptom

The policy logger stops displaying log entries after you run a policy with the `CommandResponse` function.

The `impactserver.log` may also report multiple unmarshalling errors. For example:

```
Interceptor for (http://soap.common.response.micromuse.com/)SoapActionTreeLoggerService#
(http://soap.common.response.micromuse.com/)getLog has thrown exception, unwinding now
org.apache.cxf.interceptor.Fault: Unmarshalling Error: An invalid XML character
(Unicode: 0x1b) was found in the element content of the document.
```

### Resolution

1. Stop the Impact Server.

```
<impact_home>/bin/stopImpactServer.sh
```

2. Navigate to the logs directory and rename the log file, `<servername>_policylogger.log`

```
cd <impact_home>/logs/
mv <servername>_policylogger.log <servername>_policylogger.bak
```

where `<servername>` is the name of the Impact Server. For example:

```
mv NCI_policylogger.log NCI_policylogger.bak
```

3. Start the Impact server.

```
<impact_home>/bin/startImpactServer.sh
```

## UI Data Provider Issues

### Error hostname in certificate didn't match <192.168.1.1>!=

After installed Impact FP4 + FP14. If Impact are encountering:- 01 Nov 2018 05:29:51,847 ERROR [ImpactServerNavModel] Could not initializeDataSourceIdentifier(). Reason: java.lang.Exception: hostname in certificate didn't match: <192.168.1.1> != at com.micromuse.response.client.restui.RestCallUtil.makeRestCall(RestCallUtil.java:161) at com.micromuse.response.client.restui.RestCallUtil.makeRestCall(RestCallUtil.java:80) at com.micromuse.response.client.restui.RestCallFunctions.getDataSourceList(RestCallFunctions.java:58) at com.micromuse.response.client.soapclient.restprovider.CURIDataRetrieverFromSOAPClient.getDataSourceList(CURIDataRetrieverFromSOAPClient.java:125) at com.micromuse.common.restprovider.ImpactServerNavModel.initializeDataSourceIdentifiers(ImpactServerNavModel.java:249) at com.micromuse.common.restprovider.ImpactCURITimerTask.initializeDataSetIds(ImpactCURITimerTask.java:92) at com.micromuse.common.restprovider.ImpactCURITimerTask.run(ImpactCURITimerTask.java:73) at java.util.TimerThread.mainLoop(Timer.java:566) at java.util.TimerThread.run(Timer.java:516) 01 Nov 2018 05:29:52,753 ERROR [ImpactServerNavModel] Could not initializeDataSourceIdentifier(). Reason: java.lang.Exception: hostname in certificate didn't match: <192.168.1.1> !=

And problem still persist even having performed steps in technote:- [https://www.ibm.com/support/knowledgecenter/SSSHYH\\_7.1.0.14/com.ibm.netcoolimpact.doc/admin/updating\\_server\\_certs\\_with\\_hostname.html](https://www.ibm.com/support/knowledgecenter/SSSHYH_7.1.0.14/com.ibm.netcoolimpact.doc/admin/updating_server_certs_with_hostname.html)

### Solution

You can select any of the following option. Each one should fix the issue.

1. To solve this issue, change the configuration so that it uses the fully qualified domain name instead of the IP address to connect to the Impact Server.

- a. Stop the Impact Server.

- b. To enable Netcool/Impact to use the fully qualified domain name instead of the IP address, add the following statement to the `NCI_server.props` file in the `(install_directory)/impact/etc/` directory:

```
impact.server.iphostname=(Fully_qualified_domain_name)
```

where `(Fully_qualified_domain_name)` is the fully qualified domain name. In this case should be same `FQDNHostname` as defined in certificate.

- c. Save your changes.

- d. Restart the Impact Server.

Or 2. create/install a new certificate which CN is `GUIServerIPAddress`.

Or 3. copy `commons-httpclient-3.0.1.jar` from backup to `SIMPACT_HOME/lib3p` and remove `commons-httpclient-3.0.1-CVE-2012-5783.jar` under same directory.

### Fixes for DASH ==> FP3

#### NOTE:

While the fixes below are in FP2, it is recommended to use cumulative **FP3** (March 2019 release) will have the fix and no previous FP are a pre-requisite. FP2 for JazzSM 3.1.1 must be applied on top of FP1. If FP1 was not pre-installed the following workaround is required: - <https://developer.ibm.com/answers/questions/494209/tbsm-62-tbsm-ui-provider-not-working-properly-if-d.html?childToView=494210#answer-494210>

1. Defect **67790** - `com.ibm.tivoli.rest.amq.AjaxServlet` was found

After applying the CP5 to a DASH 3.1.3 installation, eventing no longer works in our Java-based CURI data provider (SMU Automation).

In Firebug, I see the following error whenever the amq request triggers:

```
https://saxb66c:16311/ibm/tivoli/amq?timeout=5000&pollDelay=5000&d=1513631116387&r=0.26271624417862727
```

```
Error 404: javax.servlet.UnavailableException: SRVE0203E: Servlet [AjaxServlet]: com.ibm.tivoli.rest.amq.AjaxServlet was found, but is missing another required class.
```

This fix is available with DASH 3.1.3.2 (FP2). See link for more. [ActiveMQ Error on DASH CP5-CP7 and FP1](#)

2. APAR= **IJ12042**. Case = TS001645438 TBSM 6.2.0.0 - DASH 3.1.3.1 - 404/ibm/tivoli/amq resource error Case

```
Error : [11/26/18 21:20:03:618 CET] 000000de SystemErr R java.lang.NullPointerException
```

```
[11/26/18 21:20:03:618 CET] 000000de SystemErr R at com.ibm.isc.api.contentbox.persistence.PreferenceUtil.getPII(PreferenceUtil.java:490)
```

```
[11/26/18 21:20:03:619 CET] 000000de SystemErr R at com.ibm.isc.api.contentbox.persistence.PreferenceUtil.setPreferences(PreferenceUtil.java:110)
```

```
[11/26/18 21:20:03:619 CET] 000000de SystemErr R at com.ibm.twl.ssd.common.PrefAJAXServlet.doPost(Unknown Source)
```

```
[11/26/18 21:20:03:619 CET] 000000de SystemErr R at javax.servlet.http.HttpServlet.service(HttpServlet.java:595)
```

This one has a test fix available - I don't have a defect/APAR (do DASH take APARs?). Is it fixed in FP2?

This fix is available with DASH 3.1.3.2 (FP2).

3. EA Wizard shows: Error: RequestError: Unable to load /ibm/tivoli/rest/providers/Impact\_NCICLUSTER.scxsp0661cld/datasources/IMPACT\_POLICY\_RE\_UIHELPER/datasets/RE\_UIHELPER\_policy\_variables/items?properties=all&optimize=true&param\_executePolicy=true&param\_ACTION=CHECKCONFIG&clearCache=true&

We identified that there was a mismatch with ibm-wink-jaxrs-1.0.0.jar in DASH 3.1.3.1 which was causing this issue and we fixed same in FP03 by updating the jar.

See TS002071390 / TS002218767

Following are the checksum of working and non-working jars..

Working : 1284483328 816539 ibm-wink-jaxrs-1.0.0.jar

Non\_working : 2887665535 816412 ibm-wink-jaxrs-1.0.0.jar

It is recommended to use cumulative **FP3** (March 2019 release) will have the fix and no previous FP are a pre-requisite.

## ActiveMQ Port conflict when JazzSM and Impact are on the same machine

### Symptom

Symptoms are intermittent and varied. They include:

1. Logout from JazzSM is unresponsive.
2. JazzSM does not respond to stopServer.sh command.
3. Errors seen in Websphere or Liberty logs: ERROR [Default Executor-thread-9] (BrokerService.java:621) - Failed to start Apache ActiveMQ ([ActiveMQBroker, null], java.io.IOException: Failed to bind to server socket: nio://0.0.0.0:16324 due to: java.net.BindException: Address already in use).  
java.io.IOException: Failed to bind to server socket: nio://0.0.0.0:16324 due to: java.net.BindException: Address already in use

Logs files are ImpactUI/logs/messages.log

4. Connectivity sluggishness on Impact UI.

### Cause

JazzSM and Impact are listening on the same ActiveMQ Port: 16324.

The issues occurs when **all** the conditions below are met:

- 1) JazzSM and Impact are installed on the same machine.
- 2) JazzSM and Impact are running at the same time. Symptoms vary depending on which one starts first.
- 3) **JazzSM is installed using default port range** - i.e. starting with port 16310 and with 16324 for ActiveMQ.

### Resolution

1. Create a new text file called ActiveMQBroker.properties and place it under the Impact install. Take note of the directory path for the new file.

Use the ActiveMQBroker.properties sample below, or copy the file from a JazzSM install i.e. from /opt/IBM/JazzSM/ui/properties/ActiveMQBroker.properties

The important point to note is that the port used for ActiveMQBroker.transportConnectorURIs property, in this file, must **not** be 16324. Pick an unused port - i.e. 16399, or any unused port.

Sample: ActiveMQBroker.properties

```
ActiveMQBroker.brokerName=ActiveMQBroker
ActiveMQBroker.persistent=false
ActiveMQBroker.useJmx=false
ActiveMQBroker.transportConnectorURIs=nio://0.0.0.0:16399
ActiveMQBroker.mc.createConnector=false
ActiveMQBroker.useShutdownHook=false
// Configurable properties, can be modified:
// timeout: the number of seconds to wait for events
ActiveMQBroker.timeout=5
// pollDelay: the number of seconds to wait before next poll
ActiveMQBroker.pollDelay=25
// pollErrorDelay: the number of seconds to wait after an error before next poll
ActiveMQBroker.pollErrorDelay=5
// totalMemoryLimit: the maximum amount of memory allowed for ActiveMQ messages
ActiveMQBroker.totalMemoryLimit=20971520
// queueMemoryLimit: the maximum amount of memory allowed for ActiveMQ messages
ActiveMQBroker.queueMemoryLimit=524288
-----
```

2. Update <impact install location>/wlp/usr/servers/<ImpactUI Server>/apps/ImpactUI.ear/com.ibm.tivoli.rest.war/WEB-INF/web.xml and set the ActiveMQServlet port to the same new port as above.

```

<!-- ActiveMQServlet -->
<context-param>
<param-name>org.apache.activemq.brokerURL</param-name>
<param-value>nio://localhost:16399</param-value>
</context-param>
<context-param>
<param-name>brokerURL</param-name>
<param-value>nio://localhost:16399</param-value>
</context-param>

```

3. Edit the bootstrap.properties files for the Impact UI server, i.e. typically located here:  
/opt/IBM/tivoli/impact/wlp/usr/servers/ImpactUI/bootstrap.properties

Add a new property **com.ibm.tivoli.rest.utils.BROKER\_PROPS\_HOME** to this file, to specify a directory for the new ActiveMQBroker.properties file.

i.e. if the file is here: /opt/IBM/tivoli/impact/ActiveMQBroker.properties, add the following line:

```
com.ibm.tivoli.rest.utils.BROKER_PROPS_HOME=/opt/IBM/tivoli/impact
```

4. Restart Impact UI Server.

```

$IMPACT_HOME/bin/stopGUIServer.sh
$IMPACT_HOME/bin/startGUIServer.sh

```

## APAR: IJ14065: latest wink jar is not copied to profile/lib folder when upgraded from DASH 3.1.3 to FP2

### Symptom

When tried to access any Event Analytics Configuration we have these error messages like:

```

"Error connecting to Impact data provider RequestError: Unable to load
/ibm/tivoli/rest/providers/Impact_NCICLUSTER.SPCTP-NCOVW-HML06/datasources/IMPACT_POLICY_RE_UIHELPER/datasets/RE_UIHELPER_policy_variables/items?properties=all&optimize=true&
param_executePolicy=true&param_ACTION=CHECKCONFIG&clearCache=true&request.preventCache=1556886652183 status: 404".

```

Error found on impactgui.log:

```

-----
03 May 2019 15:51:59,364 INFO [ImpactCURITimerTask] Registered cluster NCICLUSTER with the Navigational Model
03 May 2019 15:52:01,380 INFO [ImpactServerNavModel] Registered Non SQL DataType TopicsCreationTracker
03 May 2019 15:52:34,902 INFO [ImpactRestproviderRegistryServlet] Initializing UI Data Provider
03 May 2019 15:52:36,025 ERROR [RestCallUtil] Error 400: ServiceManager: Service NOI_CLEANUP_REPORTS could not locate registered class for service.

```

Error found on impactserver.log:

```

-----
03 May 2019 15:52:36,021 ERROR [ServiceUIResource] ServiceManager: Service NOI_CLEANUP_REPORTS could not locate registered class for service.
com.ibm.micromuse.response.common.RespException: ServiceManager: Service NOI_CLEANUP_REPORTS could not locate registered class for service.
.
.
03 May 2019 15:54:18,887 INFO [PolicyRepository] About to export Policy: NOI_CLEANUP_REPORTS
03 May 2019 15:54:18,887 INFO [PolicyRepository] Exported Policy: NOI_CLEANUP_REPORTS
-----

```

### Cause

APAR: IJ14065: latest wink jar is not copied to profile/lib folder when upgraded from DASH 3.1.3 to FP2

After upgrade to FP3, cksum of wink file under /profile/lib and ui/lib, should like below  
cksum ibm-wink-jaxrs-1.0.0.jar  
1284483328 816539 ibm-wink-jaxrs-1.0.0.jar

### Resolution

Install DASH 3.1.3.3.

<https://developer.ibm.com/answers/questions/494209/tbsm-62-tbsm-ui-provider-not-working-properly-if-d/>

## Understanding the Event Reader Log Messages

When viewing the log messages for OMNibus Reader, you would see messages like:

```
Read: 266 New Read: 261 Updates: 0 OSQueue: 261 ReadBuffer: 1248 Time: 0 Events Read/Sec: 266 New Events Read/Sec: 261 Memory: 250794008
```

What does it mean? Below is a brief explanation:

Read: 266 These are the number of events read in the current query

New Read 261: Out of these 266 events, 261 events are "new". Impact has a internal buffer where it stores the events read in the last 3 queries. When Impact gets events, it first checks if the event is the "same" as any event present in the ReadBuffer. If it is, then it is not added to the Reader Queue. In this example, only 5 events were dropped, the remaining 261 events are placed in the Reader Queue

OSQueue: This is the size of the queue where the "Raw" events are placed. By Raw, I mean events which are received from the select statement executed in OMNibus and are new events as explained above. Almost always, OSQueue = New Read because events from OSQueue are immediately send over to another queue where they are evaluated against filters to determine which policy they should be send over to.

ReadBuffer: This is size of the buffer which was explained in the New Read section

Time: Time it took to fetch the events from the Query Result Set

Events Read/Sec: Number of events Read per second.

New Events/Sec: Number of New events Read per second

Memory: Memory utilized in the JVMs heap.

## Using reports for troubleshooting

Use the IBM® Tivoli® Netcool®/Impact reporting feature to quickly diagnose any faults in your environment.

The reports can also identify potential performance bottlenecks in a test environment before migrating to a production environment.

To read this paper click [here](#)

## Web services

### Symptom

A customer enabled web services security and the web service policy was failing to run.

### Cause

The problem was a missing parameter that is part of the classes inside the jar that is created by the compiler from the WSDL file.

The WSDL file was created by the web services team at the target environment so this parameter could not be extracted by Impact.

### Resolution

The entire SOAP envelope can be sent to the web server by using the the GetHTTP method in an Impact policy.

Please see the following example Impact policy.

The formatting of the envelope needs to be very specific to the target environment.

```
function setAndSendTheRequest(Host,Port,Protocol,Path,Method,body, result) {
    HTTPHost=Host;
    HTTPPort=Port;
    //Protocol="https"; //here you can change it to https
    Log("Connecting to REST Server: " + Host + " on port: " + Port);
    ChannelKey="";
    AuthHandlerActionTreeName="";
    HttpProperties=NewObject();
    // HttpProperties.ContentType="application/json";
    HttpProperties.ContentType=body;
    HttpProperties.UserId="netcool";
    HttpProperties.Password="XXX";
    Log("Body: " + body); ThePage=GetHTTP(HTTPHost, HTTPPort, Protocol, Path, ChannelKey, Method,
    AuthHandlerActionTreeName,
    null, null, null, HttpProperties);
    //Log(CurrentContext());
    //Log("The page is " + ThePage);
    result = ThePage;
}

CircuitID = "TPNDF[0230]Line4064/LAPTPND4064/S12_D200/TribBidirectional01";

env="

```

```

"</ns2:DataValue>"+
"</ns2:GenericFields>"+
"</ns2:ObjectValue>"+
"</ns2:DataValue>"+
"</ns2:GenericFields>"+
"</ns4:CustomFields>"+
"<ns4:PrimaryContact>"+
"<ns4:Contact>"+
"<ID xmlns='urn:base.ws.rightnow.com/v1_2' id='84810' />"+
"</ns4:Contact>"+
"</ns4:PrimaryContact>\n"+
"<ns4:StatusWithType>\n"+
"<ns4:Status>\n"+
" <Name xmlns='urn:base.ws.rightnow.com/v1_2'>Assigned</Name>\n"+
"</ns4:Status>\n"+
"</ns4:StatusWithType>\n"+
""+
"</ns7:RNOjects>"+
"<ns7:ProcessingOptions>"+
"<ns7:SuppressExternalEvents>false</ns7:SuppressExternalEvents>"+
"<ns7:SuppressRules>false</ns7:SuppressRules>"+
"</ns7:ProcessingOptions> "+
"</ns7:Create>"+
"</soapenv:Body>"+
"</soapenv:Envelope>";

Path = "/cgi-bin/support.cfg/php/custom/api_for_netcool.php";
Protocol="http";
Method="POST";
result = "";
setAndSendTheRequest("mywebserver.host.com",80,Protocol,Path,Method,(""+env),result);
Log("result: " + result);

```

## Event Analytics

### Event Analytics open issues

Case TS002161883 TS002178710 Skill Allocation Error when > 100 Groups 69150

[POC: NOI 1.5: SWAT: \[Event Analytics\]: Groups not allocated correctly when Pattern has > 100 groups. \(69150\)](#)

**Symptom:** Not all expected groups are allocated to a pattern

**Root Cause:** The issue happens when > 100 groups are to be allocated to a pattern. The code to clear obsolete patterns was incorrectly in a loop (the loop for the 100 batch processing). So ones which were allocated in the first batch of 100 were being considered as obsolete by the next batch.

**Resolution:** Fix is available in PG\_ALLOCATE\_PATTERNS\_GROUPS.js (planned for FP17).

---> Test Fix can be applied on top of FP15.

Case TS002161447 TS002185045 Skill Seasonality - statistic not working - Race Condition 69149

[POC: NOI 1.5: SWAT: \[Event Analytics\]: Suppression Statistics not updated correctly. \(69149\)](#)

**Symptom:** Suppression totals for Seasonality rules are lower than expected.

**Root Cause:** The issue happens when many events for the same rule are received at the same time.

**Resolution** Fix is available in SE\_UTILS.js (planned for FP17).

---> Test Fix can be applied on top of FP13+

Case TS002161447 TS002185045 Skill Seasonality - Some dates not working - NPE 69143

[POC: NOI 1.5: SWAT: \[Event Analytics\]: Non-occurrence weekdays not working \(69143\)](#)

**Symptom:** Non-occurrence Seasonality rules are not working. Error in logs is [SE\_PROCESSEVENT\_NONOCCURRENCE][pool-2-thread-4067]Caused by: org.mozilla.javascript.EcmaError: ReferenceError: "varStartEndTime" is not defined.

**Root Cause:** Coding issue..

**Resolution** Fix is available in event-analytics.jar (planned for FP17).

Case TS002161447 TS002185045 Skill Seasonality - Delay not working for non-occur 69155

[POC: NOI 1.5: SWAT: \[Event Analytics\]: Non-occurrence Delay action not working \(69155\)](#)

**Symptom:** Non-occurrence Seasonality rules are not working when a delay is specified. Error in logs is [SE\_PROCESSEVENT\_AFTERACTION][MessageProcessor-Dog#2]Caused by: org.mozilla.javascript.EcmaError: TypeError: Cannot read property "STATE" from undefined

**Root Cause:** Issue happens when a rule with a delay action is deleted. The RULE\_PROCESS\_DELAYED\_ACTIONS table had an old rule name: NonOcc\_PowerSupplyTest but the SE\_RULE\_CONFIGURATION table has NonOcc\_Notification .

**Resolution** Fix in SE\_PROCESSEVENT\_AFTERACTION.js and SE\_RULE\_ACTION\_DELETE.js. Planned for FP17.

Case TS002178931 Parent = TS002161509 - NOI - Fired stats not updated for deployed groups

[POC: NOI 1.5: SWAT: \[Event Analytics\]: Deployed group Times Fired not updated \(69177\)](#)

**Symptom:** Deploy a group (not a pattern). Now send in matching events. Events are grouped OK in the Event Viewer. But the group status are not updated.

**Root Cause:** Issue happens all the time. Policy RE\_PROCESSEVENT is called from the reader. This calls Policy RE\_ACT\_GROUPSYNTHETIC

LASTFIRED, TIMESFIRED, TIMESFIRESMONTHLY are returned from RE\_GETGROUPS\_ACTIVE from RELATEDEVENTS.RE\_GROUPS

**Resolution** Fix in RE\_ACT\_GROUPSYNTHETIC.js + PG\_ALLOCATE\_PATTERNS\_GROUPS.js Planned for FP17. See also IJ14904 for Pattern statistics.

RTC NOI 1.6: IVT: Unable to unsuppress event with Seasonality Rule

[NOI 1.6: IVT: Unable to unsuppress event with Seasonality Rule \(69179\)](#)

**Symptom:** Deploy a seasonality rule. But it is not fired as expected.

**Root Cause:** Issue happens because the ProcessSeasonalityAfterAction reader has read buffers so does not consider the reads to be new. Look for **Read: 1 New Read: 0** in the reader log file.

1. When have an action to delay, Impact creates a new row in derby table, SEASONALITY.RULE\_PROCESS\_DELAYED\_ACTIONS This table has an index (key field) and a timestamp field, LASTUPDATE. The number of seconds for the delay is stored in NUMBEROFSECONDS. The time the record was created is stored in CREATIONTIME.

2. Every 1 second the Event Reader (ProcessSeasonalityAfterAction) reads the table and fires policy SE\_PROCESSEVENT\_AFTER policy for rows read. The select statements has a where clause like this : SELECT ... FROM SEASONALITY.RULE\_PROCESS\_DELAYED\_ACTIONS WHERE LASTUPDATE >= '2019-05-13 05:22:39.000' AND (1=1) ORDER BY LASTUPDATE FETCH FIRST 1000 ROWS ONLY

3. The policy SE\_PROCESSEVENT\_AFTER looks at the record read, and works out if the current time > CREATIONTIME + NUMBEROFSECONDS. If so it fires the action. But if the record exists in a read buffer it is not considered new, and so no policy will be fired.

#### Resolution

The workaround is to make the change to the impact props file, i.e.

```
Add
impact.processseasonalityafteraction.numreaderbuffer=0
to
etc/<SERVER>_processseasonalityafteraction.props
```

and restart the backend Impact Server.

In FP17, the props file will be updated to make this change.

## Event Processing Issues

---

### Events are processed twice.

#### Symptom

Events are enriched twice in Impact.

#### Cause

This issue can occur if there is duplicate alerting, i.e. events are updated by multiple sources, for example, if there are two active probes monitoring the same event source.

**Note:** Normally in probe architecture, there would not be two active probes monitoring the same sources. Instead a Master and Slave probe configuration would be used, so only the Master probe would send alerts.

#### Resolution

1. Ensure there is a flag field on the event to monitor if enrichment has already occurred. i.e. TicketingComplete
2. Update the policy used for event processing to check this flag and exit if the event is already processed, i.e.

```
If (EventContainer.TicketingComplete != 0) {
  Exit();
}
```

# Best Practices

The following Best Practice documents are available for download:

- [IBM Netcool/Impact 7.1 Best Practices Guide](#)
- [IBM Netcool/Impact 6.1.1 Best Practices Guide](#)
- [IBM Netcool Operations Insight 1.3 Installation & Upgrade Guide - Best Practices](#)
- [Netcool OMNIBus 8.1 Web GUI Event List sending NodeClickedOn data using Netcool Impact](#)

Also see Best Practice documentation for IBM Netcool/OMNIBus:

- [IBM Netcool/OMNIBus Best Practices Documentation](#)

Also see the following Best Practice documentation sources:

- [IBM Tivoli Network Manager Best Practices Documentation](#)
- [IBM Tivoli Netcool Configuration Manager Best Practices Documentation](#)