**Code Correctness: Call to notify() Development Mitigation SOP**

Code correctness vulnerabilities occur when an Object API is not used properly or as intended. Code correctness vulnerabilities can occur on a call to notify() because it is ambiguous when the thread will be woken up.

**Defense Against Code Correctness: Call to notify()**

It is suggested to use notifyAll() instead of notify.

**Examples**

**General Example**

public synchronized notifyJob() {

flag = true;

notify();

}

…

public synchronized waitForSomething() {

while(!flag) {

try {

wait();

} catch(InterruptedException e) {…}

}

…

}

**Explanation**

In the example above, the developer intends to wake up the thread that calls wait(), however, the call to notify() could notify an unintended thread.

**Recommendation**

Use notifyAll().

public synchronized notifyJob() {

flag = true;

notifyAll();

}

…

public synchronized waitForSomething() {

while(!flag) {

try {

wait();

} catch(InterruptedException e) {…}

}

…

}

**Example**

@Override

public synchronized void run() {

NwqEntryRetrievalPayload batch;

try {

batch =

nwqEntryProvider.getBatchNwqEntries(numBatches,

nextInputBatchIndex, estimatedBatchSize);

exceptionUtil.logPayloadErrors(batch,jobId,stepName);

} catch(NwqEntryRetrievalException e){

throw new RuntimeException(e);

}

nextInputBatch = batch.getNwqEntries();

status = FetchTaskStatus.BATCH\_READY;

notify();

}

**Explanation**

The call to notify() above is ambiguous which thread will be woken up.

**Recommendation**

The notifyAll() method can be used as shown below:

@Override

public synchronized void run() {

NwqEntryRetrievalPayload batch;

try {

batch =

nwqEntryProvider.getBatchNwqEntries(numBatches,

nextInputBatchIndex, estimatedBatchSize);

exceptionUtil.logPayloadErrors(batch,jobId,stepName);

} catch(NwqEntryRetrievalException e){

throw new RuntimeException(e);

}

nextInputBatch = batch.getNwqEntries();

status = FetchTaskStatus.BATCH\_READY;

notifyAll();

}

**References**

[**HP Enterprise security - Code Correctness: Call to notify()**](https://vulncat.fortify.com/en/detail?id=desc.structural.java.code_correctness_call_to_notify#Java%2fJSP)