



APPENDIX **B**

Code Samples

Introduction

This appendix contains samples of files used to configure the adapters that process the data that the Collection Manager receives.

- [Application Configuration, page B-1](#)

Application Configuration

The following sections list part of the XML file (**nf-dbttables.xml**) used to configure the database tables, and the DTD file used to verify the structure of the XML file.

- [CM:NetFlow nf-dbttables.xml File, page B-2](#)

CM:NetFlow nf-dbtabs.xml File

The XML file is verified at runtime against a simple DTD, which is reproduced in the following section:

```
<?xml version="1.0" encoding="ISO8859_1"?>
<!DOCTYPE dbtabconf PUBLIC "-//P-Cube//Engage DB RDR Configuration 2.1.0//EN"
"dbtables.dtd">
<dbtabconf>
  <fileversion/>
  <application name="NetFlow" version="3.7.0"/>
  <dbtables>
    <rdr name="USAGE_NF" dbtabname="RPT_USAGE_NF" tag="Usage"
      createtable="true">
      <fields>
        <field id="1" name="TIME_STAMP" type="TIMESTAMP">
          <options>
            <option property="source" value="timestamp" />
          </options>
        </field>
        <field id="2" name="NF_HEAD_TIME_STAMP" type="INT32">
          <options>
            <option property="source" value="nf_timestamp" />
          </options>
        </field>
        <field id="3" name="NF_HEAD_SOURCE_ID" type="UINT32">
          <options>
            <option property="source"
value="recordsource" />
          </options>
        </field>
        <field id="4" name="NF_CLASS_ID" type="UINT32" /> <!-- For
Future Releases-->
        <field id="5" name="NF_APPLICATION_ID" type="INT32DIG10"
/>
        <field id="6" name="NF_INGRESS_IF" type="UINT32" />
        <field id="7" name="NF_EGRESS_IF" type="UINT32" />
        <field id="8" name="NF_FLOW_DIRECTION" type="UINT8" />
        <field id="9" name="NF_FLOW_START_SYSUP_TIME"
type="UINT32" />
        <field id="10" name="NF_FLOW_END_SYSUP_TIME" type="UINT32"
/>
        <field id="11" name="NF_IN_PKTS" type="UINT64" >
          <options>
            <option property="source" value="unsigned64" />
          </options>
        </field>
        <field id="12" name="NF_IN_BYTES" type="UINT64" >
          <options>
            <option property="source" value="unsigned64" />
          </options>
        </field>
        <field id="13" name="NF_CONNECTION_COUNT_NEW"
type="UINT32" />
        <field id="14" name="NF_CONN_SUM_DURATION" type="UINT64" >
          <options>
            <option property="source" value="unsigned64" />
          </options>
        </field>
      </fields>
      <indexes>
        <index name="RPT_USAGE_NF_I1"
columns="NF_HEAD_TIME_STAMP">
          <options>
```

```

                                <option property="clustered" value="true"
/>
                                <option property="allowduprow"
value="true" />
                                </options>
                                </index>
                                </indexes>
</rdr>
<rdr name="TRANSACTION_NF" dbtabname="RPT_TRANSACTION_NF"
tag="Transaction"
    createtable="true">
    <fields>
        <field id="1" name="TIME_STAMP" type="TIMESTAMP">
            <options>
                <option property="source" value="timestamp" />
            </options>
        </field>
        <field id="2" name="NF_HEAD_TIME_STAMP" type="INT32">
            <options>
                <option property="source"
value="nf_timestamp" />
            </options>
        </field>
        <field id="3" name="NF_HEAD_SRC_ID" type="UINT32">
            <options>
                <option property="source" value="recordsource" />
            </options>
        </field>
        <field id="4" name="NF_CONN_TX_ID" type="UINT64" >
            <options>
                <option property="source" value="unsigned64" />
            </options>
        </field>
        <field id="5" name="NF_APPLICATION_ID" type="INT32DIG10"
/>
        <field id="6" name="NF_INGRESS_IF" type="UINT32" />
        <field id="7" name="NF_EGRESS_IF" type="UINT32" />
        <field id="8" name="NF_FLOW_DIRECTION" type="UINT8" />
        <field id="9" name="NF_FLOW_START_SYSDUP_TIME"
type="UINT32" />
        <field id="10" name="NF_FLOW_END_SYSDUP_TIME" type="UINT32"
/>
        <field id="11" name="NF_IN_PKTS" type="UINT64" >
            <options>
                <option property="source" value="unsigned64" />
            </options>
        </field>
        <field id="12" name="NF_IN_BYTES" type="UINT64" >
            <options>
                <option property="source" value="unsigned64" />
            </options>
        </field>
        <field id="13" name="NF_SRC_IPV4_ADDR" type="IPADDRDIG10"
>
            <options>
                <option property="source"
value="ipaddress"/>
            </options>
        </field>
        <field id="14" name="NF_SRC_PORT" type="UINT16" />
        <field id="15" name="NF_DST_IPV4_ADDR" type="IPADDRDIG10"
>
            <options>

```

```

value="ipaddress" />
                                <option property="source"
                                </options>
                                </field>
                                <field id="16" name="NF_DST_PORT" type="UINT16" />
                                <field id="17" name="NF_PROTOCOL_ID" type="UINT8" />
                                <field id="18" name="NF_FLOW_ID" type="UINT64" > <!-- Not
used in 3.7. Reserver for future use-->
                                <options>
                                <option property="source" value="unsigned64" />
                                </options>
                                </field>
                                <field id="19" name="NF_FLOW_END_REASON" type="UINT8" />
                                <field id="20" name="NF_BIFLOW_DIRECTION" type="UINT8" />
                                </fields>
                                <indexes>
                                <index name="RPT_TRANSACTION_NF_I1"
columns="NF_HEAD_TIME_STAMP">
                                <options>
                                <option property="clustered" value="true"
/>
                                <option property="allowduprow"
value="true" />
                                </options>
                                </index>
                                </indexes>
                                </rdr>

                                <table name="NF_INI_VALUES" dbtabname="NF_INI_VALUES">
                                <fields>
                                <field id="1" name="TIME_STAMP" type="TIMESTAMP" />
                                <field id="2" name="NF_IP" type="STRING" size="20" />
                                <field id="3" name="VALUE_TYPE" type="INT16" />
                                <field id="4" name="VALUE_KEY" type="STRING" size="255" />
                                <field id="5" name="VALUE" type="INT32" />
                                </fields>
                                </table>
                                </dbtables>
                                </dbtabconf>

```

tables.dtd File

The following sample code represents the DTD file used to verify the **nf-dbttables.xml** definition file:

```
<?xml version="1.0" encoding="ISO8859_1"?>

<!ELEMENT dbtabconf (fileversion, application, db?, dbtables)>
<!ELEMENT fileversion (#PCDATA)>
<!ELEMENT application EMPTY>
<!ATTLIST application
  name CDATA #REQUIRED
  version CDATA #REQUIRED
>
<!ELEMENT db (options)>
<!ELEMENT dbtables (rdr*, aggtable*, table*)>
<!ELEMENT table (options?, fields, indexes?)>
<!ATTLIST table
  name CDATA #REQUIRED
  dbtabname CDATA #REQUIRED
  createtable (true | false) "true"
  inserttoDb (true | false) "false"
>
<!ELEMENT aggtable (options?, fields, indexes?)>
<!ATTLIST aggtable
  name CDATA #REQUIRED
  dbtabname CDATA #REQUIRED
  aggperiod CDATA #REQUIRED
  createtable (true | false) "true"
>
<!ELEMENT rdr (options?, fields, indexes?)>
<!ATTLIST rdr
  name CDATA #REQUIRED
  dbtabname CDATA #REQUIRED
  tag CDATA #REQUIRED
  createtable (true | false) "true"
  inserttoDb (true | false) "true"
>
<!ELEMENT fields (field+)>
<!ELEMENT field (options?)>
<!-- the id attribute below is presumably a numeric index, but it is for future
     use, we currently don't look at it, as the order is imposed in the XML -->
<!ATTLIST field
  id CDATA #REQUIRED
  name CDATA #REQUIRED
  type CDATA #REQUIRED
  size CDATA #IMPLIED
>
<!ELEMENT indexes (index+)>
<!ELEMENT index (options?)>
<!ATTLIST index
  name CDATA #REQUIRED
  columns CDATA #REQUIRED
  create (true | false) "true"
>
<!ELEMENT options (option+)>
<!ELEMENT option EMPTY>
<!ATTLIST option
  property CDATA #REQUIRED
  value CDATA #REQUIRED
>
```

You can set the location and name of the DTD and XML files separately for each adapter in the adapter configuration file.

