HP DecisionCenter

for the AIX, Windows®, and Itanium® operating systems

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Migration Guide

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1 Introduction

The HP DecisionCenter 2.00 migration process requires familiarity with data warehouse schemas, Connect-It scenarios, and Business Objects universes. The information in this document is for advanced users who are responsible for:

- Customizing and configuring the DecisionCenter data warehouse schemas, reports, universes.
- Installing DecisionCenter with the three product components: IT Performance Analytics (ITPA), Business Impact Analytics (BIA), and Optimization.

Ensure that you have access to, and permissions to use, the resources on the computer and network of the HP DecisionCenter 2.00 installation.

Migration Requirements

HP DecisionCenter 1.00 is a candidate for migration if you can meet these requirements:

- DecisionCenter 1.00 successfully installed with all required components
- ServiceCenter 5.1, 6.0, 6.1, or 6.2 with one of the following schema conditions
  - An out-of-box schema
  - A well-migrated schema
  - A ServiceCenter schema customized only with additional tables or fields

  Ensure that you complete all ServiceCenter migration steps before you begin migration. You must run the DecisionCenter 2.00 unload file for ServiceCenter that is in the Support files directory on the DecisionCenter installation media.
- AssetCenter 4.3, 4.4, or 5.0

  Ensure that you complete all AssetCenter migration steps before you begin migration. You must run the DecisionCenter 2.00 script file for AssetCenter that is in the Support files directory on the DecisionCenter installation media.

Migration Environment

Ensure that you meet all of the requirements described in the *DecisionCenter Installation Guide* and in the DecisionCenter Support Matrix on the **HP Software Support** web site.

Migration Notes

The following list describes the BusinessObjects resources that you can use during the migration process.

- If you customized DecisionCenter 1.00 reports and universes, you should install the DecisionCenter 2.00 reports and universes and re-apply the original customization.
- Review the BusinessObjects documentation for any post-migration tasks that you might need to complete, and how to validate the migrated objects, such as universes and reports, in the new environment.

Migration Scenarios

The DecisionCenter migration process enables you to merge your customized schemas, reports, and universes with the DecisionCenter 2.00 features.

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new DecisionCenter features.

The migration instructions guide you through upgrading:

- DecisionCenter 1.00 data warehouse schemas and content (reports and universes)
- DecisionCenter 1.00 ITPA
- DecisionCenter 1.00 ITPA + BIA
- DecisionCenter 1.00 ITPA + BIA + Optimization

This guide has separate chapters for each major upgrade step. The chapters are in the suggested order of migration.

Table 1 Document Map

Chapter	Description
Chapter 1, Introduction	Migration scenarios
Chapter 2, Customize the Data Warehouse Schemas	Customization hints for the data warehouse schema
Chapter 3, Migrate the Data Warehouse	Migration steps for a customized data warehouse
Chapter 4, Customize Scenarios and Universes	Customization hints for the data warehouse scenario and universes
Chapter 5, Migrate Reports and Universes	Migration steps for customized reports and universes
Chapter 6, Business Impact Analysis Migration	Migration steps for business impact analysis
Chapter 7, Migrate the Optimization Engine	Migration steps for the optimization engine
Appendix A, Customization Planning	How to plan the implementation strategy when customizing the data warehouse
Appendix B, Schema Changes	Data warehouse table changes in the rds_etl.xml file
Appendix C, Scenario Changes	Scenario structure changes that support ServiceCenter 6.2 and Service Manager 7.0

2 Customize the Data Warehouse Schemas

The *Data Warehouse Administration Online Help* topics and *Best Practices for Data Warehouse Administration Guide* provide an introduction to the data warehouse schemas. The following information is for advanced users who customize the data warehouse schema. Topics include:

— Schema Customization Tips on page 11

— DecisionCenter Analytics Content on page 12

— XML Schema Descriptions on page 13

— The rdbms_keywords.xml File on page 28

— Changes to the XML File for Adding Custom Structures on page 29

Schema Customization Tips

For easy migration and maintenance, set proper naming conventions for customized fields and tables. For example, to modify the data warehouse schema, the new attributes or tables can start with C_ to mean Customized. The data warehouse uses consistent naming conventions. All the entities in the data warehouse, such as tables or fields, use uppercase. For example, **INCIDENT_D**.

The rds_etl.xml file provides data warehouse schema data. The rds_etl.xsd file defines the XML schema syntax. These files are in the data warehouse installation **conf** directory: \\…\HP\DecisionCenter 2.00\ITPA-SM for ServiceCenter and Service Manager and \\…\HP\DecisionCenter 2.00\ITPA-AM for Asset Management.

Always back up the rds_etl.xml file before you modify the data warehouse schema. To adhere to best practices, do not remove the out-of-box data warehouse files and fields.

When customizing any XML file, use an XML editor tool to validate your changes against the schema file.

The DecisionCenter synchronization process marks AssetCenter and ServiceCenter deletion event records in the data warehouse. To adhere to best practices, do not customize the deletion process because it may break the existing metadata and sample reports.

DecisionCenter Analytics Content

The data warehouse default schema contains tables for ServiceCenter OLAP summary reporting and operational detail reporting as well as AssetCenter Portfolio, Finance, and Contract. Sample reports are available for ServiceCenter and AssetCenter modules. Common support files are linked with ServiceCenter modules.

Table 2 Default Schema Content

Content	ServiceCenter	AssetCenter
Modules	• Change Management • Configuration Management • Incident Management • Problem Management • Request Management • Service Level Agreement Management • Service Management	• Portfolio • Finance • Contract
Common Support Files	• Contacts • Location • Dept • Company • Operator • Vendor • Model	

XML Schema Descriptions

The data warehouse XML files have several types of defined tables. Each table has a unique purpose and definition. The tables are:

Table 3 Data Warehouse Tables

Table Type	Description
Dimension	Dimension tables map the tables in your source database containing the dimensions and measures at the core of your reports. Good candidates for this type of table are financial information (expline, amExpenseLine), Configuration Items (device, amAsset), Call and Incident (incidents, probsummary), or any tables containing counts and sums that require tracking. Dimension tables are often paired with: • Fact tables, which contain simplified measure information and links to other common Dimension tables. • Aggregate tables, which roll up measures based on the most common grouping fields for faster processing.
Direct Mapping	You can map tables that are useful for reports in a supporting capacity as direct mappings. These tables are simplest to set up.
Associate	Associate, or bridge, tables normalize many-to-many relationships, thus preventing many of the traps that can lead to bad data.
Hierarchy	Drill down functions in reports rely on parent-child relationships between records. Hierarchy tables create a drill tree for easy layering of data. These are useful for organization charts, CI relationships, and locations.

Each table type has its own section in the XML file. Make sure that you create a table within the defined tags for that type. The following sections explain each table type and its syntax in detail.

Dimension, Fact, and Aggregate Tables

Dimension tables are robust tables with associated fact (measure) and aggregate tables. Use dimension tables to map tables with commonly used measure information. Otherwise, map the table as a direct mapping table.

The following code is a simplified version of the out-of-box INCIDENT_D dimension table.

```
<dimension name="INCIDENT" rdsVersion="5.3" attributeAction="update">
      <dimensionTableName>
        INCIDENT_D
      </dimensionTableName>
      <dataSourceTableName>
        incidents
      </dataSourceTableName>
      <dimensionTableFields>
```

```
    <dimensionTableField name="INCIDENT_ID" type="char" size="100"/>
    <dimensionTableField name="CONTACT_NAME" type="char" size="140"/>
    <dimensionTableField name="SEVERITY" type="char" size="60"/>
    <dimensionTableField name="HANDLE_TIME" type="float"/>
    <dimensionTableField name="OPEN_TIME" type="date"/>
    <dimensionTableField name="CLOSE_TIME" type="date"/>
    <dimensionTableField name="FIRST_CALL" type="char" size="1"/>
    <dimensionTableField name="ASSIGNMENT" type="long"/>
    <dimensionTableField name="AGEDURATION" type="float"/>
  </dimensionTableFields>
  <uniqueKeys name="incident_unique">
    <uniqueKey fieldName="INCIDENT_ID"  srcFieldName="''incident.id''"
       srctype="char" size="100"
      seqIndex="1" defaultValue="no match"/>
  </uniqueKeys>
  <facts>
    <fact name="INCIDENT_F">
      <factKeys>
         <factKey name="Z_RDSINCIDENT_DID"/>
         <factKey name="Z_RDSCONTACT_DID" fieldName="CONTACT_NAME"
           tableName="CONTACT_D" matchFieldName="CONTACT_NAME"/>
      </factKeys>
      <factMeasures>
         <factMeasure name="HANDLE_TIME" srcType="src"/>
         <factMeasure name="INCIDENT_OPEN" srcType="rdsfactless"/>
         <factMeasure name="INCIDENT_CLOSE" srcType="rds"
             sqlConditions="CLOSE_TIME is
           not null" resetCount="INCIDENT_OPEN"/>
         <factMeasure name="FIRST_CALL_COUNT" srcType="rds"
             sqlConditions="FIRST_CALL ='1'"
           resetCount=""/>
      </factMeasures>
    </fact>
  </facts>
  <scdKeys>
    <scdKey rdsFieldName="OPENPRGN" srcFieldName="OPEN" srctype="char"/>
    <scdKey rdsFieldName="SEVERITY" srcFieldName="SEVERITY"
        srctype="char"/>
  </scdKeys>
  <aggregateKeys>
    <aggregateKey name="SEVERITY" type="char" size="60"/>
    <aggregateKey name="OPEN_TIME" type="TIME"/>
  </aggregateKeys>
</dimension>
```

You need to understand the tags and their attributes before you customize the schema. The following sections describe the attributes and tags in this sample code.

The <dimension> Tag

The `<dimension>` tag frames the whole object.

```
<dimension name="INCIDENT" rdsVersion="5.3" attributeAction="update">
```

It has the following attributes:

Table 4 <dimension> Attributes

Attribute	Description
name	The root name (not including suffixes) of the dimension table, and any related fact or aggregate tables. The data warehouse uses the following conventions as best practices: • The name must be unique in the data warehouse. • The name matches the name of the source table in HP ServiceCenter or HP AssetCenter. • The name cannot be longer than 15 characters. • If the source table name is plural, use the singular version of the word. For example, `incidents` becomes `incident`.
rdsVersion	If you set this to `"5.0"`, the table ignores the rdbms_keywords.xml file. Any other setting is simply informative. For more information, see The rdbms_keywords.xml File on page 28.
attributeAction	Optional. This attribute tells the migration program how to properly handle the changes.

For proper formatting, make sure that you include `</dimension>` as the closing tag.

The <dimensionTableName> and <dataSourceTableName> Tags

The `<dimensionTableName>` displays the name of the table with the _D suffix. Make sure that this matches the name attribute from the `<dimension>` tag.

The `<dataSourceTableName>` tag contains the name of the source table as it appears in HP ServiceCenter or HP AssetCenter. Make sure that the name matches exactly because it is case-sensitive.

```
<dimensionTableName>
  INCIDENT_D
</dimensionTableName>
<dataSourceTableName>
  incidents
</dataSourceTableName>
```

The <dimensionTableField> Tag

The `<dimensionTableField>` contains the main body of the table, defining each field.

```
<dimensionTableFields>
   <dimensionTableField name="INCIDENT_ID" type="char" size="100"/>
   <dimensionTableField name="CONTACT_NAME" type="char" size="140"/>
   <dimensionTableField name="SEVERITY" type="char" size="60"/>
   <dimensionTableField name="HANDLE_TIME" type="float"/>
   <dimensionTableField name="OPEN_TIME" type="date"/>
   <dimensionTableField name="CLOSE_TIME" type="date"/>
   <dimensionTableField name="FIRST_CALL" type="char" size="1"/>
   <dimensionTableField name="ASSIGNMENT" type="long"/>
   <dimensionTableField name="AGEDURATION" type="float"/>
 </dimensionTableFields>
```

It has the following attributes:

Table 5 <dimensionTableField> Attributes

Attribute	Description
name	The name that you use for the field. The data warehouse uses the following conventions as best practices: • The name must be unique in the table. • The name matches the name of the source table in HP ServiceCenter or HP AssetCenter. • The underscore character (_) replaces the period (.) in the field name. For example, contact.name becomes CONTACT_NAME.
type	This is the data type to use. The data warehouse uses four data types: `char`, `float`, `date`, and `long`. The following chart shows how they map from common HP ServiceCenter data types: **ServiceCenter Data Type** → **Data Warehouse Data Type** character → char number → float date → date date (relative) → float logical → char size=1 array (simple) → long array of structure → map to new table (see Arrays on page 26.
size	You use this attribute only when `type="char"`. This is the length of the field according to your data.
attributeAction	Optional. This attribute tells the migration program how to properly handle the changes.

The <uniqueKeys> Tag

The <uniqueKeys> tag defines the unique key for the table. It has only the name property. For best practices, use the name of the table, followed by "_unique". This name must be unique in the database.

```
<uniqueKeys name="incident_unique">
 <uniqueKey fieldName="INCIDENT_ID" srcFieldName="''incident.id''"
    srctype="char" size="100" seqIndex="1" defaultValue="no match"/>
</uniqueKeys>
```

Inside the <uniqueKeys> set of tags is one or more <uniqueKey> tag with the following attributes:

Table 6 <uniqueKey> Attributes

Attribute	Description
fieldName	This is the name of the field from the <dimensionTableField> tag. The data warehouse uses the following conventions as best practices: • The <dimensionTableFields> section must have an equivalent field defined. • The field must be type="char". If the key field is a different data type, create a second field with the extension _KEY to contain the text version of the data. For example, the OUTAGE_D table has the the following code: <dimensionTableField name="OUTAGE_ID" type="float"/> <dimensionTableField name="OUTAGE_ID_KEY" type="char" size="60"/> The original numeric data is mapped to OUTAGE_ID, and a text equivalent is mapped to OUTAGE_ID_KEY. The <uniqueKey> tag uses the latter.
scrFieldName	This is the name of the field as it appears in HP ServiceCenter or HP AssetCenter. This is case-sensitive. The data warehouse uses the following conventions as best practices: • If the field is contained in a structure, include the structure name, separated by a period. For example, In the PROBLEM table, srcFieldName="header.number". • If the field name contains a period, surround the name with two single quotation marks. For example, in the INCIDENT table, the attribute reads: srcFieldName="''incident.id''" The TZFILE_SWITCH table has the following key: srcFieldName="switchover.''local.switchover.time''"
scrType	This is the data type of the original field (char, date, float, or long). If you converted the field to char from another type, list the data warehouse data type closest to the original type.

Table 6 <uniqueKey> Attributes

Attribute	Description
size	You use this attribute only when `type="char"`. This is the size of the field from the `<dimensionTableField>` tag.
seqIndex	If you use more than one field in the key, the order to process the fields starts from 1. The data warehouse uses the following conventions as best practices: • To determine which fields to use and in what order, open the Database Dictionary tool from HP ServiceCenter. View the structure of the source table and look at the Indexes section on the right. Find the FIRST key with a unique designation. Mimic the order of these fields. This ensures that delete synchronization works properly. • You can use a maximum of 5 fields in a composite key for a dimension table. If the table requires more than that, consider making a direct mapping table instead.
defaultValue	This must always be `"no match"`.

The Fact Table Definition

The fact table definition section is optional. If you do not need a fact table, replace the entire section with the `<facts>` tag.

```
<facts>
 <fact name="INCIDENT_F">
   <factKeys>
     <factKey name="Z_RDSINCIDENT_DID"/>
     <factKey name="Z_RDSCONTACT_DID" fieldName="CONTACT_NAME"
      tableName="CONTACT_D" matchFieldName="CONTACT_NAME"/>
     <factKey name="OPEN_TIMEID" fieldName=OPEN_TIME"
tableName=RDS_TIMEDIM_D" matchFieldName="FULLDATE"/>
    </factKeys>
    <factMeasures>
       <factMeasure name="HANDLE_TIME" srcType="src"/>
       <factMeasure name="FIRST_CALL_COUNT" srcType="rds"/>
sqlConditions="FIRST_CALL ='1'"
               resetCount=""/>
       <factMeasure name="INCIDENT_OPEN" srcType="rdsfactless"/>
       <factMeasure name="INCIDENT_CLOSE" srcType="rds"
sqlConditions="CLOSE_TIME is not null" resetCount="INCIDENT_OPEN"/>
    <factMeasures>
   </fact>
</facts>
```

A fact table has two sections: `<factKeys>` and `<factMeasures>`.

The `<factKeys>` section defines the links between dimension tables. The first key is the unique fact key for this table. It contains only the name attribute. For best practices, use the naming convention Z_RDS<table name>_DID.

All other keys are foreign keys to other dimension tables. They use the following attributes:

Table 7 Foreign Key Attributes

Attribute	Description
name	The name of the fact key for the foreign table.
fieldName	The name of the dimension table field (from this table) used for the join.
tableName	The name of the foreign dimension table.
matchFieldName	The name of the dimension table field (from the foreign table) used for the join.

Use the following conventions as best practices for fact keys:

- At least one fact key must be a DATE field linked to RDS_TIMEDIM_D.FULLDATE.
- The maximum number of fact keys in a single table is 10.

The `<factMeasures>` section contains the numeric fields that you want to track and aggregate. Most measures are mappings for fields from the `<dimensionTableFields>` section. In that case, use only the attribute `srcType="src"`.

A special pair of types, `rdsfactless` and `rds`, create a flag field to use for counts and filters.

To create a simple flag, use the properties `srcType="rds"` and `resetCount=""`. For each record, this flags the column with a 1 if the criteria in the `sqlConditions` is met, and with a 0 if not met. FIRST_CALL_COUNT is an example of this method.

A more advanced option is to create a binary pair of flags where one is always true and one false. To do this, create one measure with the attribute `srcType="rdsfactless"` (see INCIDENT_OPEN in the previous code). Then create a second with the properties `srcType="rds" sqlConditions="<your criteria>" resetCount="<factless measure name>"` (see INCIDENT_CLOSE in the previous code). For each record, the ETL process determines if the condition in the `sqlConditions` attribute is met. If it is, INCIDENT_OPEN gets a value of 0, and INCIDENT_CLOSE gets a value of 1. If not, the opposite happens.

You can have only one `rdsfactless` measure per table.

The <scdKeys> Tag

The Slowly Changing Dimension (SCD) fields section is optional. If you do not need a fact table, replace the entire section with the `<scdKeys>` tag.

```
<scdKeys>
  <scdKey rdsFieldName="OPENPRGN" srcFieldName="OPEN" srctype="char"/>
  <scdKey rdsFieldName="SEVERITY" srcFieldName="SEVERITY" srctype="char"/>
</scdKeys>
```

The SCD key tracks the history of a field. When you update a record in a way that alters the SCD key, a copy of the record is made. The original record is marked *obsolete*, but remains in the database.

The maximum number of SCD fields is 10.

SCD fields have the following attributes:

Table 8 SCD Field Attributes

Attribute	Description
rdsFieldName	This is the name of the field from the `<dimensionTableFields>` section. The data warehouse uses the following conventions as best practices: • There must be an equivalent field defined in the `<dimensionTableFields>` section. • The field must be `type="char"`. If the key field is a different data type, create a second field with the extension _KEY to contain the text version of the data.

srcFieldName	This is the name of the field as it appears in HP ServiceCenter or HP AssetCenter. The data warehouse uses the following conventions as best practices:
	• If the field is contained in a structure, include the structure name, separated by a period. For example, In the PROBLEM table, `srcFieldName="header.number"`.
	• If the field name contains a period, surround the name with two single quotation marks. For example, in the INCIDENT table, the attribute reads:
	`srcFieldName="''incident.id''"`
	The `TZFILE_SWITCH` table has the following key:
	`srcFieldName="switchover.''local.switchover.time''"`

srctype	This is the data type of the original field (`char`, `date`, `float`, or `long`). If you converted the field to `char` from another type, list the data warehouse data type closest to the original type.

The <aggregateKeys> Tag

The aggregate table definition section is optional. If you do not need an aggregate table, replace the entire section with the `<aggregateKeys>` tag.

```
<aggregateKeys>
   <aggregateKey name="SEVERITY" type="char" size="60"/>
   <aggregateKey name="OPEN_TIME" type="TIME"/>
</aggregateKeys>
```

All the measures from your fact table are summed up over time for each unique value in each aggregate key.

Aggregate keys have the following attributes:

Table 9 <aggregateKeys> Attributes

Attribute	Description
name	This is the name of the field from the `<dimensionTableFields>` section.
type	This is the data type of the field (`char`, `date`, `float`, or `long`).
size	You use this attribute only when `type="char"`. This is the size of the field from the `<dimensionTableField>` tag.

Aggregate keys use the following conventions:

- Aggregate keys (except the last key) must use the `type="char"` attribute.
- The last aggregate key **must** be a date field with the `type="TIME"` attribute. Only one date type is allowed.
- The maximum number of aggregate keys is 15.

For proper formatting, include `</dimension>` as the closing tag.

Associate Table

The associate tables, also called bridge tables, are used for many-to-many relationships between dimension tables.

```
<associates>
  <associate name="INCIDENT_MODEL_ASS" tableName="INCIDENT"
     fieldName="MODEL" tableName2="MODEL"fieldName2="MODEL"/>
  <associate name="CM3R_DEVICE_ASS" tableName="CM3R"
     fieldName="logical_name" longFieldName="assets" tableName2="DEVICE"
     fieldName2="LOGICAL_NAME"/>
</associates>
```

Associate tables have the following parameters:

Table 10 Associate Table Attributes

Attribute	Description
name	The unique name for this table. For best practices, use the first 8 letters of the tables to be joined, separated by an underscore, followed by the extension _ASS.
tableName	The name of the first dimension table (with no suffix).
fieldName	The name of the field to bridge in the first dimension table.
longFieldName	Optional. If the join in question involves a list of values (such as an array of character field in HP ServiceCenter), map that array to a `long` data type in the dimension table, then refer to that `long` field here. The data in the array of character field merges with the field in `fieldName` to create a list of associate records.

For example, the cm3r table (Change Management) contains a primary configuration item for the change (cm3r.logical.name) and an array of additional configuration items (cm3r.assets).

If your original record contains:

Change Number: C1

Primary CI: Server101

Affected CIs: PC001, PC002, PC003

then the associate table contains these records:

Change Number	Logical Name
C1	Server101
C1	PC001
C1	PC002
C1	PC003

- **tableName2** The name of the second dimension table (with no suffix).
- **fieldName2** The name of the field to bridge in the second dimension table.

Hierarchy Table

Hierarchy tables based on dimension tables are created for Online Analytical Processing (OLAP) summary reports. You can use the hierarchy levels to drill to lower, or detail, levels. The predefined hierarchy examples in HP ServiceCenter include location, department, contacts, and device.

```
<hierarchies>
     <hierarchy tablename="location" type="fullpath" level="5"
        uniquefieldName="location" fullpathfieldname="location_full_name"/>
     <hierarchy tablename="contact" type="parent" level="5"
        uniquefieldName="contact_name" parenttableName="contact"
        parentfieldname="manager"/>
</hierarchies>
```

The two types of hierarchies are: *fullpath* and *parent*.

The fullpath style of hierarchy assumes the presence of a field in the table containing the fully qualified path of the object in the hierarchy. This is the traditional method that HP AssetCenter tables use. The location in the previous example illustrates this method.

The parent style of hierarchy assumes the table contains a foreign key that maps to the unique key of the parent record. The contact table in the previous example uses this method. Each contact record contains a manager field holding the ID of another contact record.

Hierarchies have the following attributes:

Table 11 Hierarchy Table Attributes

Attribute	Description
tablename	The name of the dimension table to extract the hierarchy from.
type	Enter *fullpath* or *parent* as appropriate.
level	The number of tiers to process. By default this is 5 and the maximum is 10.
uniquefieldName	For a *fullpath* type, this contains the field used to build the fullpath. For a *parent* type, this contains the unique ID of the parent table.
fullpathfieldname	For the *fullpath* type only, this is the field containing the fully qualified path.
parenttablename	For the *parent* type only, this is the name of the table containing the parent record. This can be the same as the tablename attribute if the table refers to itself.
parentfieldname	For the *parent* type only, this is the field containing the foreign key.

Direct Mapping Table

Direct mapping tables are simple structures with no associated fact, hierarchy, or aggregate tables. Use direct mappings for supporting and detail tables.

The following code is a simplified version of the out-of-box Activity direct mapping table.

```
<directMapping name="activity" rdsVersion="5.0"
     dataSourceTableName="activity"
     parentDimensionTableName="PROBSUMM" attributeAction="update">
    <directMappingFields>
      <directMappingField name="THENUMBER" type="char" size="50"/>
      <directMappingField name="NUMBERPRGN" type="char" size="60"/>
      <directMappingField name="TYPE" type="char" size="60"/>
      <directMappingField name="NEGDATESTAMP" type="float"/>
    </directMappingFields>
    <directMappingIndexes>
      <directMappingIndex name="UNIQACTIVITY_IDX">
        <DirectMappingIndexKey fieldName="numberprgn" srcFieldName="number"
            srctype="char" size="60" seqIndex="1"/>
        <DirectMappingIndexKey fieldName="negdatestamp"
            srcFieldName="negdatestamp" srctype="date" seqIndex="2"/>
        <DirectMappingIndexKey fieldName="thenumber"
            srcFieldName="thenumber" srctype="char" size="60" seqIndex="3"/>
      </directMappingIndex>
      <directMappingIndex name="DELACTIVITY_IDX">
        <DirectMappingIndexKey fieldName="NUMBERPRGN"
            srcFieldName="NUMBERPRGN" srctype="char" size="60"/>
      </directMappingIndex>
    </directMappingIndexes>
  </directMapping>
```

You need to understand the tags and their attributes before you customize the schema. The following sections describe the attributes and tags in this sample code.

The <directMapping> Tag

The `<directMapping>` tag frames the whole object.

```
<directMapping name="activity" rdsVersion="5.0" dataSourceTableName="activity"
      parentDimensionTableName="PROBSUMM" attributeAction="update">
```

It has the following attributes:

Table 12 <directMapping> Attributes

Attribute	Description
name	The root name for the table. This must match the name of the source table.
rdsVersion	If you set this to `"5.0"`, the table ignores the rdbms_keywords.xml file. All other settings are informative. For more information, see The rdbms_keywords.xml File on page 28.
dataSourceTableName	The name of the table as it appears in HP ServiceCenter or HP AssetCenter.
parentDimensionTableName	Optional. If you use cascading deletions, this is the name of the dimension table where deletions trigger a deletion of related records in your direct mapping table. You must specify a delete index.
attributeAction	Optional. This attribute tells the migration program how to properly handle the changes.

For proper formatting, make sure that you include `</directMapping>` as the closing tag.

The <directMappingField> Tag

The `<directMappingField>` contains the main body of the table, defining each field.

```
<directMappingFields>
  <directMappingField name="THENUMBER" type="char" size="50"/>
  <directMappingField name="NUMBERPRGN" type="char" size="60"/>
  <directMappingField name="TYPE" type="char" size="60"/>
  <directMappingField name="NEGDATESTAMP" type="float"/>
</directMappingFields>
```

It has the following attributes:

Table 13 <directMappingField> Attributes

Attribute	Description
name	The name that you use for the field. The data warehouse uses the following conventions as best practices: • The name must be unique in the table. • The name matches the name of the source table in HP ServiceCenter or HP AssetCenter. • The underscore character (_) replaces the period (.) in the field name. For example, `contact.name` becomes `CONTACT_NAME`.
type	This is the data type to use. The data warehouse uses four data types: `char`, `float`, `date`, and `long`. The following chart shows how they map from common HP ServiceCenter data types: **ServiceCenter Data Type** → **Data Warehouse Data Type** character → char number → float date → date date (relative) → float logical → char size=1 array (simple) → long array of structure → map to new table (see Arrays on page 26.
size	You use this attribute only when `type="char"`. This is the length of the field according to your data.
attributeAction	Optional. This attribute tells the migration program how to properly handle the changes.

The <directMappingIndex> Tag

The two index types are *unique* and *delete*. The unique key is required. You only use the delete key if you set up a cascading delete, described in the parentDimensiontableName attribute on page 24.

The `<directMappingIndex>` tag has one attribute: `name`. The name attribute typically follows the pattern UNIQ<TABLENAME>_IDX for unique keys and DEL<TABLENAME>_IDX for delete keys.

Inside the <DirectMappingIndexKey> set of tags is one or more <DirectMappingIndexKey> tag with the following attributes:

Table 14 <directMappingIndexKey> Attributes

Attribute	Description
fieldName	This is the name of the field from the <directMapingField> tag.
scrFieldName	This is the name of the field as it appears in HP ServiceCenter or HP AssetCenter. This is case-sensitive. The data warehouse uses the following conventions as best practices: • If the field is contained in a structure, include the structure name, separated by a period. For example, In the PROBLEM table, srcFieldName="header.number". • If the field name contains a period, surround the name with two single quotation marks. For example, in the INCIDENT table, the attribute reads: srcFieldName="''incident.id''" The TZFILE_SWITCH table has the following key: srcFieldName="switchover.''local.switchover.time''"
scrType	This is the data type of the original field (char, date, float, or long). Unlike dimension tables, direct mapping keys can be any data type.
size	You use this attribute only when type="char". This is the size of the field from the <dimensionTableField> tag.
seqIndex	If you use more than one field in the key, the order to process the fields starts from 1. The data warehouse uses the following conventions as best practices: • To determine which fields to use and in what order, open the Database Dictionary tool on HP ServiceCenter. View the structure of the source table and look at the Indexes section on the right. Find the FIRST key with a unique designation. Mimic the order of these fields. This ensures that delete synchronization works properly. • A maximum of 10 fields is allowed in a composite key for a direct mapping table.

For proper formatting, include </directMapping> as the closing tag.

Arrays

HP ServiceCenter tables contain array and structure data types that typical RDBMS systems do not support. As such, they require special handling.

The two methods for mapping arrays are:

- Simple Array of Char type fields (a list of strings) where you can create a single field in the main table of type long. This concatenates all lines into a single body of text. This is useful for comments and lists of items that do not need to be individually processed.

- Complex items, such as Array of Structure types, where you must map the data to a new data warehouse table that is associated to the original.

The clock table in the following example contains an array of structure called events.

The main table, created as a dimension table because it contains measure information, is CLOCK_D. The array is mapped to direct mapping table CLOCK_EVENTS because it contains only supporting data.

```
<directMapping name="CLOCK_EVENTS" rdsVersion="5.3" attributeAction="add"
      parentDimensionTableName="CLOCK">
```

As a best practice, the name contains the name of the parent and the name of the array, separated by an underscore. The `parentDimensionTableName` attribute is set to `CLOCK`, indicating that this table is dependent on another table.

```
   <directMappingFields>
     <directMappingField name="TYPE" type="char" size="60"/>
     <directMappingField name="KEY_CHAR" type="char" size="60"/>
     <directMappingField name="KEY_NUMERIC" type="float"/>
     <directMappingField name="NAME" type="char" size="60"/>
     <directMappingField name="START" type="date"/>
     <directMappingField name="STOP" type="date"/>
   </directMappingFields>
```

The events array contains only two fields: `START` and `STOP`. Because it is necessary to associate each record with the parent record from `CLOCK_D`, you must add a copy of all fields that comprise the unique key for the parent table. In this case, `CLOCK_D` has a composite key made of four fields: `TYPE`, `KEY_CHAR`, `KEY_NUMERIC`, and `NAME`.

```
<directMappingIndexes>
  <directMappingIndex name="UNIQCLOCKEV_IDX">
    <DirectMappingIndexKey fieldName="TYPE" srcFieldName="type"
       srctype="char" size="60" seqIndex="1"/>
    <DirectMappingIndexKey fieldName="KEY_CHAR" srcFieldName="''key.char''"
       srctype="char" size="60" seqIndex="2"/>
    <DirectMappingIndexKey fieldName="KEY_NUMERIC"
       srcFieldName="''key.numeric''" srctype="float" seqIndex="3"/>
    <DirectMappingIndexKey fieldName="NAME" srcFieldName="name"
       srctype="char" size="60" seqIndex="4"/>
    <DirectMappingIndexKey fieldName="START" srcFieldName="events.start"
       srctype="date" seqIndex="5"/>
    <DirectMappingIndexKey fieldName="STOP" srcFieldName="events.stop"
       srctype="date" seqIndex="6"/>
  </directMappingIndex>
```

Arrays do not contain their own unique key, so it is necessary to build a unique set of fields. You start by adding all the unique keys from the parent table. Then you add as many fields as necessary from the array to enforce uniqueness. In this case, you cannot guarantee a unique record unless you add both START and STOP. The result is a six-part composite key.

```
<directMappingIndex name="DELCLOCKEV_IDX">
  <DirectMappingIndexKey fieldName="TYPE" srcFieldName="type" srctype="char"
     size="60" seqIndex="1"/>
  <DirectMappingIndexKey fieldName="KEY_CHAR" srcFieldName="''key.char''"
     srctype="char" size="60" seqIndex="2"/>
  <DirectMappingIndexKey fieldName="KEY_NUMERIC"
     srcFieldName="''key.numeric''" srctype="float" seqIndex="3"/>
  <DirectMappingIndexKey fieldName="NAME" srcFieldName="name" srctype="char"
     size="60" seqIndex="4"/>
   </directMappingIndex>
  </directMappingIndexes>
</directMapping>
```

Because the data warehouse only tracks deletions on source tables, it is necessary to associate this table with the parent for cascading deletes. A second index is made containing all fields that comprise the unique key for the parent.

Using the Connect-It scenario, you must create a new mapping for this destination table. You can reuse the same produced document from HP ServiceCenter that mapped the parent, but you must make a separate mapping.

The rdbms_keywords.xml File

The data warehouse has a predefined rdbms_keywords.xml file to accommodate every RDBMS set of reserved words. When the field names specified in the rds_etl.xml file match one of the keywords in rdbms_keywords, the data warehouse field name uses the field name with the suffix of PRGN. For example, the **type** field name becomes the TYPEPRGN field name.

For backward compatibility, reserved words **domain** and **value** do not change for PROBSUMM_D and DEVICE_D. Reserved words **type**, **month**, **year**, and **action** do not change for direct mapping tables with the <rdsVersion> attribute set to 5.0.

Changes to the XML File for Adding Custom Structures

The following table contains tags that the XML file uses only for migration. When you add or change tables after you run the `rds_init` utility, you can use these tags to avoid deleting tables and data.

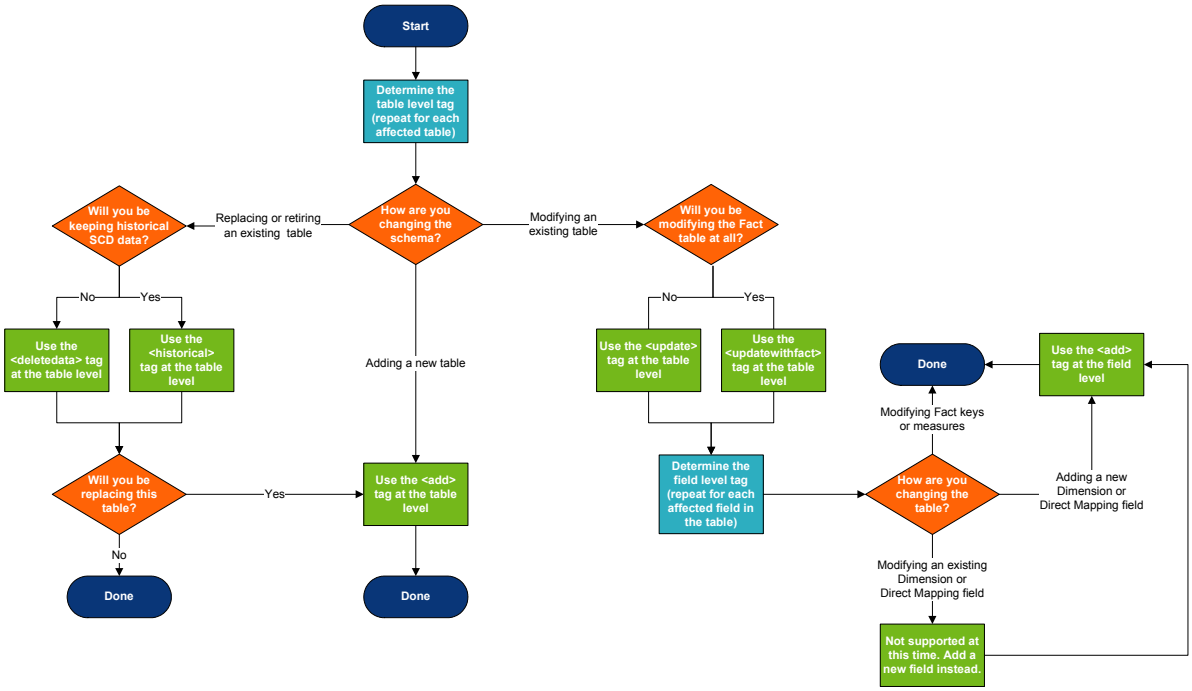
Table 15 Valid attributeAction Tags

attributeAction Tag	Description
Add	Creates a new table with fields specified in the rds_etl.xml file.
Deletedata	Deletes all records in the table.
Historical	Marks all records to be historical.
Update	Updates table with new fields and creates unique keys. Does not recreate the associated fact tables.
Updatewithfact	Updates table with new fields and creates unique keys. Recreates the associated fact tables.

Make sure that you add all the appropriate attributeAction tags to any objects you altered or added. The attributeAction tags:

- Include `add`, `deletedata`, `historical`, `update`, and `updatewithfact` values at the table level.
- Include the `add` value at the column level.
- Are not available for fact or associate tables.
- Require the `update` value when you need to change a unique key for a table.
- Do not support `attributeAction="delete"`.
- Add SQL exception entries to the `rds_etl_migrate.log` file. If you find entries in the `rds_etl_migrate.err` file, the migration is not complete. The only way to recover is to restore from your backup file and start the migration process again.
- Require the `updatedwithfact` value when you update a dimension table and add a new associated fact table.

You can use this decision tree to help you determine what attributeAction tags you need when migrating.



3 Migrate the Data Warehouse

The data warehouse is a repository of integrated information that is available for queries and analysis. It contains information about the data warehouse database, Connect-It scenarios, and schemas that run the Extract, Transform, and Load (ETL) process.

You can migrate your out-of-box or customized DecisionCenter 1.00 data warehouse to be compatible with a DecisionCenter 2.00 installation. If your installation meets the requirements, you can complete the migration tasks described in this chapter to ensure that your existing data warehouse is compatible with DecisionCenter.

Migrating customized data requires advice from HP Support and may require assistance from HP Professional Services personnel. For more information visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport/

Migration Prerequisites

Before you migrate the data warehouse, ensure that you have the following:

- DecisionCenter 1.00 successfully installed with all required components
- Sufficient capacity in your database transaction log file size and tablespace allocation to avoid “out of space” conditions

  Contact your database administrator to verify the allocations.
- Backup files of your existing data warehouse database

  The backup file is critical if you need to rerun the migration because of errors in the rds_etl_migrate.err file.
- Administrative rights to modify schemas, scenarios, reports, and universes

  If you customized the schema (*_etl.xml), scenario (rds_*.scn), reports, or universes, you must manually merge the changes from the new files with your customized files. Make sure that you have appropriate access rights to the files.

Migration Checklist

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new features in DecisionCenter 2.00.

Print this checklist to use during the migration process. As you complete each task, mark it finished.

- ☐ Task 1: Back Up Existing Schema and Scenario Files on page 32
- ☐ Task 2: Upgrade to Connect-It 3.80 on page 33
- ☐ Task 3: Run the DecisionCenter 2.00 Installer on page 33
  - — Step 1: Install the Data Warehouse for ServiceCenter on page 33
  - — Step 2: Install the Data Warehouse for AssetCenter on page 34
- ☐ Task 4: Reconcile the Files on page 34
  - — Step 1: Update the ServiceCenter Files on page 34
  - — Step 2: Update the AssetCenter Files on page 35
  - — Step 3: Edit Connect-It Synchronization Times on page 36

Task 1: Back Up Existing Schema and Scenario Files

1. Stop the data warehouse Connect-It scenario from the Connect-It Service Console.

   For ServiceCenter, the scenario is rds_sc.

   For AssetCenter, the scenario is rds_ac.

2. Back up the existing data warehouse, files, folders, and sub-folders in the original data warehouse location.

   For DecisionCenter with ServiceCenter, the default location is:
   \\Program Files\HP OpenView\DC\RDS_SC

   For DecisionCenter with AssetCenter, the default location is:
   \\Program Files\HP OpenView\DC\RDS_AC

3. Back up the existing data warehouse database in Oracle or Microsoft SQL Server.

4. Open Connect-It 3.6 Service Console and delete rds_sc service.

Task 2: Upgrade to Connect-It 3.80

1. Install and configure the latest version of Connect-It. See the *DecisionCenter Installation Guide*.
2. For ServiceCenter only, copy the following files from the DecisionCenter installation media SupportFiles\CIT directory to your Connect-It installation.

From **SupportFiles\CIT**	To **\\Program Files\HP OpenView\Connect-It 3.80 en**
rds.bas	\config\rds\bas\rds.bas
rds.scp	\config\rds\const\rds.scp
sc*.cfg	\config\sc\config\

Task 3: Run the DecisionCenter 2.00 Installer

Follow the steps in the next section to install the DecisionCenter data warehouse files for ServiceCenter or AssetCenter.

Step 1: Install the Data Warehouse for ServiceCenter

ServiceCenter and Service Manager unload files contain records that you need to use with DecisionCenter. Your ServiceCenter or Service Manager user profile must have system administration rights to complete this procedure.

If you have an existing DecisionCenter installation, it is important to apply the newest unload to meet the requirements of DecisionCenter 2.00. Do not skip this step.

1. Import the DecisionCenter unload file from the DecisionCenter installation media. See the *DecisionCenter Installation Guide* for detailed instructions.

   For ServiceCenter 6.2 and later, use DCA20.unl.

   ServiceCenter 6.2 and Service Manager 7.0 only: Complete these additional steps.

   a. From the ServiceCenter or Service Manager navigation pane, click **Toolkit** > **Database Manager**.

   b. Type `triggers` in the **Table** field, or select it from the drop-down list.

   c. Click **Search**.

   d. Type `deviceparent.bi.after.delete` in the **Trigger Name** field and click **Search** on the toolbar. ServiceCenter populates the remaining fields with information about this trigger.

   e. Click **Delete** on the toolbar to remove the record and confirm the deletion when prompted. ServiceCenter returns this message: Trigger record deleted.

   For versions prior to ServiceCenter 6.2, use DCA20_PreSC62.unl.

2. Install the DecisionCenter data warehouse for ServiceCenter. See the *DecisionCenter Installation Guide*.

Step 2: Install the Data Warehouse for AssetCenter

Install the DecisionCenter data warehouse files for AssetCenter. See the *DecisionCenter Installation Guide*.

Task 4: Reconcile the Files

You must manually merge changes from the previous schema and scenario files with the newly installed files.

Step 1: Update the ServiceCenter Files

1 If you customized the schema, manually merge the customized rds_etl.xml file changes from \\Program Files\HP OpenView\DC\RDS_SC\conf\ to \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\conf\

Search for the attributeAction attribute in the new rds_etl.xml file to identify the changes. See Appendix B, Schema Changes for the specific changes. Manually add your original customizations to this file.

2 Copy rds_sc.ini from \\Program Files\HP OpenView\DC\RDS_SC\cit to \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit

3 To ensure that the tables synchronize, use a text editor to delete the following lines from the rds_sc.ini file. Because Connect-It scans the complete table, the synchronization time increases as you delete additional lines.

cm3rSrc
incidentSrc
outageSrc
outageeventSrc
rootcauseScr

4 Migrate DecisionCenter for ServiceCenter.

a From the **Start** menu, click **Run**, type **CMD**, and click **OK** to open a command window.

b Change directories to

\\Program Files\HP\DecisionCenter 2.00\ITPA-SM\common\bin

c Type this command:

```
rds_sc61_migrate.bat
```

To verify the migration, view the rds_etl_migrate.err file. An empty file indicates that the migration is successful.

5 If the rds_etl_migrate_err file has errors, rerun the migration.

a Correct the errors in the file.

b Delete rds_etl_migrate.err and rds_etl.migrate.log files.

c Restore the backup data warehouse database.

d Run `rds_sc61_migrate`.

6 From the Oracle or SQL Server database, change the PROG_PATH field in the RDS_DBINFO table to the DecisionCenter 2.00 location. For example:

```
UPDATE RDS_DBINFO
SET PROG_PATH ='C:\Program Files\HP\DecisionCenter 2.00\ITPA-SM'
```

7 Update the views. From the Oracle or SQL Server database, run the scripts in \\ITPA\ITPA-SM\SupportFiles\DatabaseFiles

   a To delete views no longer used in the data warehouse:
   For Oracle, run `itpa_migrateviews_sqlsrvr.sql`
   For SQL Server, run `itpa_migrateviews_oracle.sql`

   b To create new views:
   For Oracle, run `itpa_dcviews_oracle.sql`
   For SQL Server, run `itpa_dcviews_sqlsrvr.sql`

8 If you customized the scenario, use Connect-It Scenario Builder to manually update the changes.

   a Merge rds_sc.scn from \\Program Files\HP OpenView\DC\RDS_SC\cit\ to \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit\

   b Restart the scenarios services from the Connect-It Service Console.

   c Run the modified Connect-It scenarios in your test or production environment.

Step 2: Update the AssetCenter Files

1 From the Oracle or SQL Server database:

   a Change the PROG_PATH field in the RDS_DBINFO table to the DecisionCenter 2.00 location. For example:

```
UPDATE RDS_DBINFO
SET PROG_PATH ='C:\Program Files\HP\DecisionCenter 2.00\ITPA-AM'
```

   b In both the database and the rdsac_etl.xml file, change the size of the VALUE field in the AMITEMLISTVAL table from 42 to **80**.

2 If you customized the scenario or schema, copy the files to the new DecisionCenter installation. You do not need to reconcile the files because there are no DecisionCenter file changes.

   a Copy the rds_ac.scn scenario from \\Program Files\HP Openview\DC\RDS_AC\cit\ to \\Program Files\HP\DecisionCenter 2.00\ITPA-AM\cit\

   b Copy the rdsac_etl.xml schema from \\Program Files\HP Openview\DC\RDS_AC\conf\ to \\Program Files\HP\DecisionCenter 2.00\ITPA-AM\conf

   Be sure to change the size of the VALUE field. For example:

```
<dimensionTableField name="VALUE" type="char" size="80"/>
```

3 Copy rds_ac.ini from \\Program Files\HP OpenView\DC\RDS_AC\cit\ to \\Program Files\HP\DecisionCenter 2.00\ITPA-AM\cit\

4 Restart the scenarios services from the Connect-It Service Console.

5 Run the modified Connect-It scenarios in your test or production environment.

Step 3: Edit Connect-It Synchronization Times

Due to changes in the schema, you must re-synchronize certain tables to get accurate updates.

1. Using a text editor, open the \\Program Files\HP\DC\RDS_SC\cit\rds_sc.ini file.
2. Delete the following lines.

```
slaSrc (Required)
deviceparentSrc (Required)
screlationSrc (Required)
servicecontractSrc (Required)
slaresponseSrc (Required)
slamonthlySrc (Required)
Rootcausesrc1 (Optional, but strongly encouraged)
outagedetailSrc (Optional)
categorySrc (Optional)
```

Because Connect-It scans the complete table, the synchronization time increases as you delete additional lines.

4 Customize Scenarios and Universes

The data warehouse Extract, Transform, and Load ETL process has the following components:

- Data warehouse Connect-It scenario (rds_sc.scn or rds_ac.scn)
- Data warehouse synchronization module (rds_sync.bat) that populates data warehouse fact tables, dimension SCD records, associated tables and system tables
- Data warehouse aggregation (rds_agg.bat) population module
- Data warehouse hierarchy (rds_hier.bat) population module

The rds_all Connect-It scheduler groups all these modules. The data warehouse ETL process runs daily, based as the incremental updates.

These programs generate the output files in the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\logs directory and save error messages to ERR files. Check the ERR files to verify that the size is not greater than 0 bytes. If so, check the errors and correct them accordingly.

See the Connect-It documentation for more information about customizing the scenarios.

ETL Scenario Mapping

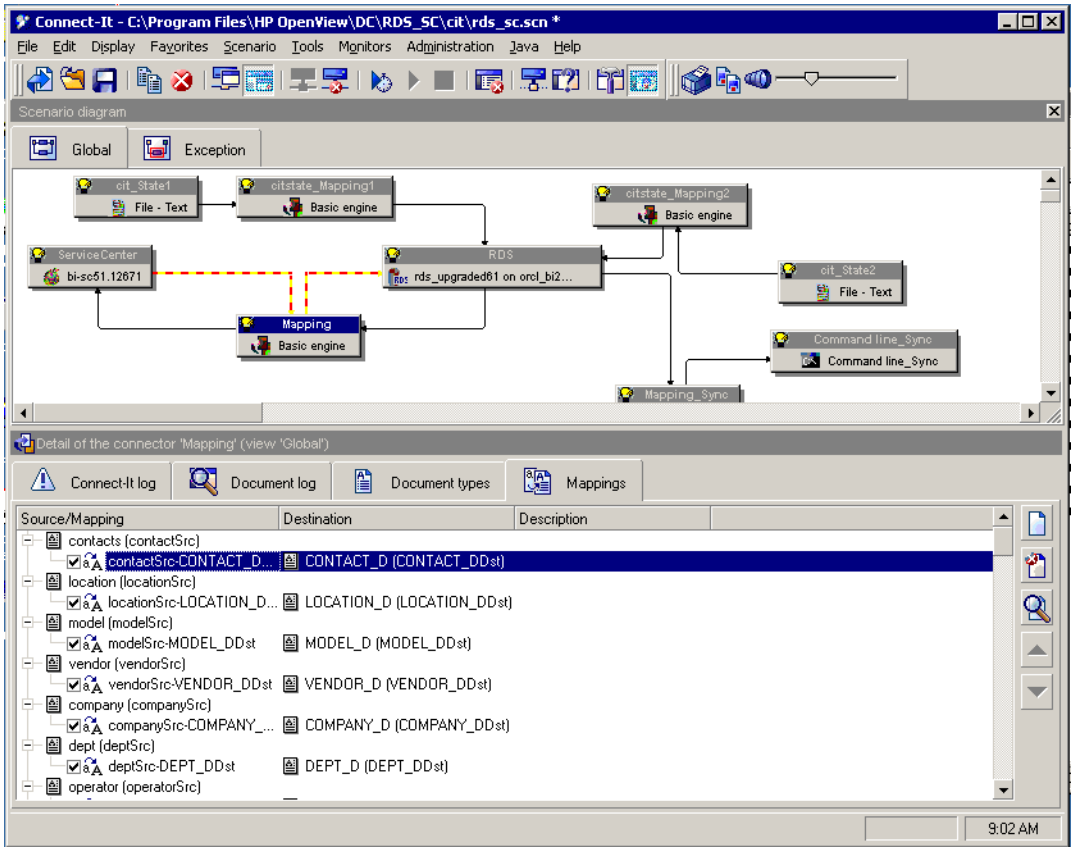
Connect-It data warehouse scenarios such as rds_sc.scn describe the metadata for the ETL process.

To View the Mapping

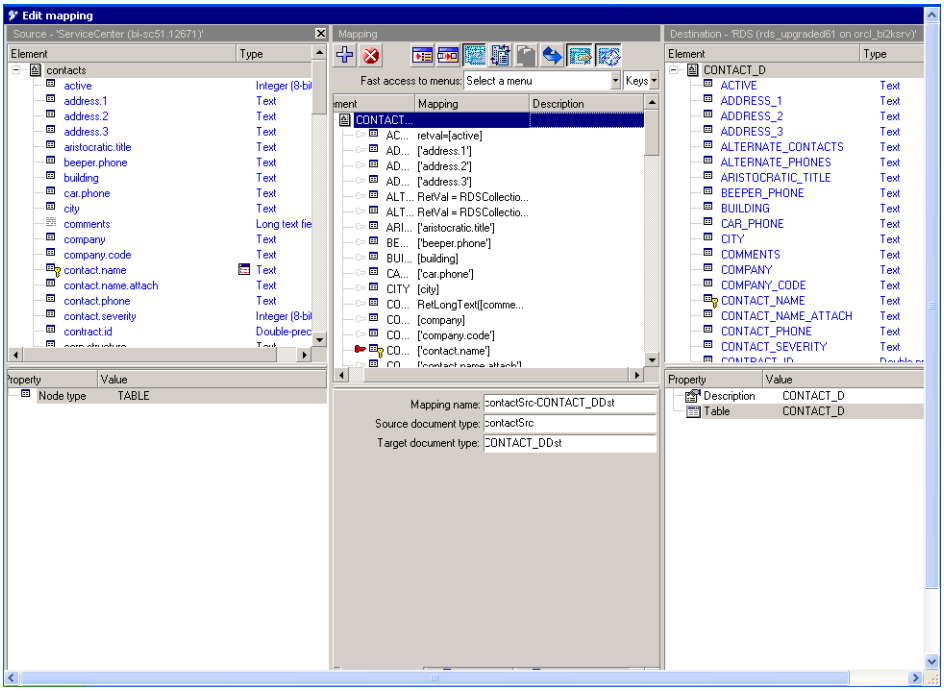
1. From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.
2. Open rds_sc.scn. The default path is: \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit\rds_sc.scn
3. Click **Scenario > Open all connectors** to ensure that you configured the connectors correctly.

4 Select any **Source/Mapping** and click the **Edit** icon to review the ETL mapping information.

The following diagram shows the mapping for **Contact**.



5 Click the **Edit a mapping** icon.



The ServiceCenter data source appears on the left and the data warehouse destination table is on the right. The middle section defines the mapping script for each attribute. See the *Connect-It User Guide* for more information.

Dimension Table and Referenced Dimension Table Changes

Based on the data warehouse dimensional modeling techniques, the following scenarios include all the possible fact table ETL processes. **Bold** text indicates changes to the DecisionCenter Analytics implementation.

When changes to dimension tables occur in ServiceCenter, the ETL process makes changes to the data warehouse.

Table 16 Changes to Dimension Tables

	ServiceCenter Activity	**ETL Activity**
Main dimension table change	• Creates a new line item such as incident or portfolio	• Adds a new fact record
	• **Updates the existing line item**	• **Updates the matched fact record only when you change the dimensional foreign keys or measurements**
	• Updates the existing Slowly Changing Dimension (SCD) line item	• **Updates the matched fact records main foreign key from the old key to the new SCD3 key**
	• Marks the existing line item as *deleted*	• Marks the matched fact record as *obsolete*
Referenced dimension table changes	• Creates a new record in the referenced dimension tables	• Makes no changes in the fact table
	• Updates existing referenced dimensional records	• Makes no changes in the fact tables
	• **Updates existing referenced dimensional SCD records**	• **Updates all the related fact records and related dimensional foreign key with the new surrogate keys**
	• Deletes existing referenced dimensional records	• Makes no changes in the fact tables

Universe Filter Conditions for Query or Reporting

The universe has filters that all reports use. The fact and dimensional tables use the following filters:

- The fact table is not *obsolete*.
- Dimensional foreign keys are greater than 5 (>= 5).
- Referenced dimensions do not include obsolete records.

Customizing the Scenario

You can map a simple field array and a simple field array in a substructure.

Simple Field Arrays

You can map alternate.contacts from the ServiceCenter contacts file to the CONTACT_D alternate_contacts long text field with the data warehouse RDSCollection2LongText method.

```
RDSCollection2LongText(”'alternate.contacts'”)
```

The approval.structure in cm3r mapping defines the simple field array approvals.req.seq. You can map the CM3R_D approved_req_seq long string field with the data warehouse RDSAnyCollection2LongText method.

```
RDSAnyCollection2LongText(”'approval.structure'.'approvals.req.seq'”,
”'approvals.req.seq'”)
```

To map a substructure array

By using the separate table created for the structure array, you can edit the rds50db.cfg file to associate the main table with the separate dependent table. Follow the steps in this example to complete the Connect-It scenario changes. For SLA_D, you create the SLAARAVA_D separate table for the sla availability structure array.

1 With a text editor, open rds50db.cfg. The default path is:

\\…\HP OpenView\ConnectIt 3.80 en\RDS_SC\cit

2 Create the relationships between SLA_D and SLAARAVA_D.

```
{ STRUCT SLA_D_OUT
    MODEOUT = 0
    TABLE = SLA_D sl
    { ATTRIBUTE AllFields
      FIELD = sl.self
    }
    { ARRAY SLA_AVAILABILITY
      TABLE = SLAARAva_D
      LINK = @{…agreement_id_key} = agreement_id_key
      { ATTRIBUTE AllFields
        FIELD = self
      }
   }
…
```

3 Save and close the file.

4 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

5 Click **File > Open** and navigate to rds_sc.scn.

6 Click **Scenario > Open all connectors**.

7 Select the **Mappings** connector.

8 In **Source/Mapping,** select **SLA** and click the **Edit a mapping** icon.

9 Create the mappings from the availability array to **SLA_AVAILABILITY** elements.

10 Select the **SLA_AVAILABILITY** collection, type **`availability`** for the **Source for the collection mapping**.

11 Check **Active collection reconciliation**.

To map unique key fields

If you modify the unique keys or add new tables, you must update the data warehouse scenario.

1 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

2 Click **File > Open** and navigate to rds_sc.scn.

3 Click **Scenario > Open all connectors**.

4 Select the **Mappings** connector.

5 Select the appropriate **Source/Mapping** mapping, then click the **Edit a mapping** icon.

6 Select the unique key element.

7 Start the key.

8 Use the CSTR mapping function.

```
CONTACT_NAME in CONTACT_D mapping is one of the unique key mappings:
CSTR(['contact.name'])
```

To map the retdate date field function

You can use the retdate data warehouse function to map the date field. For example, in the CONTACT_D mapping, the mapping for VALID_FROM is:

```
retdate(['valid.from'])
```

To map the RetLongText function for a long string data field

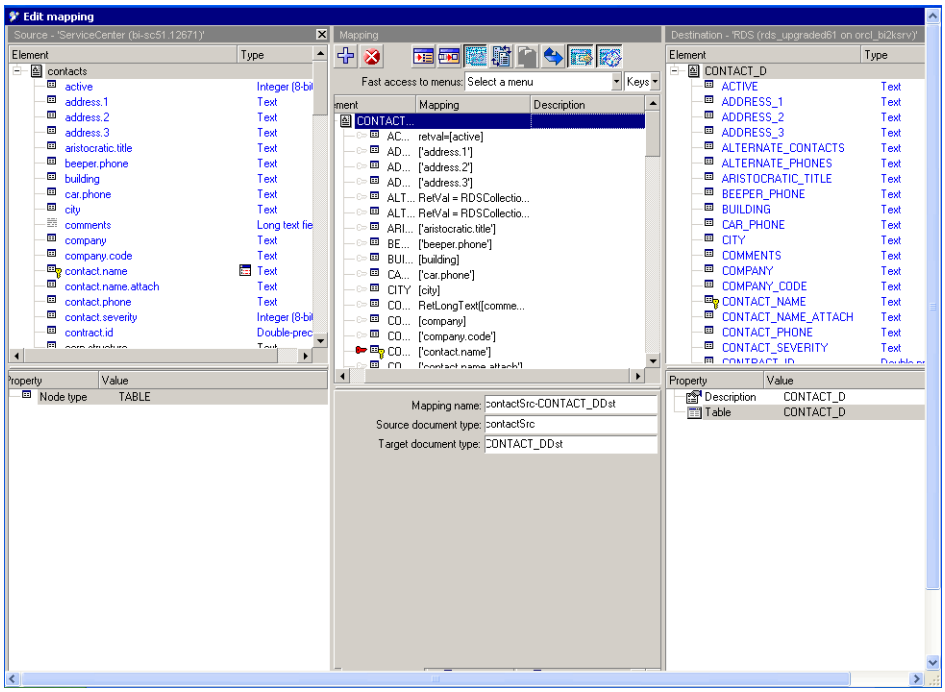
You can use the RetLongText data warehouse function to map the long field. For example, in CONTACT_D mapping, the mapping for the comment field is:

```
RetLongText([comments])
```

To map functions for dimension tables

The following functions populate dimension data. The input variable names are based on the dimension name. Check any predefined dimension mapping for detail examples, such as CONTACT_D.

The following example is from the CONTACT_D OpenSession method.



To create the OpenSession method at the dimension table level

1. From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.
2. Click **File > Open** and navigate to rds_sc.scn.
3. Click **Scenario > Open all connectors**.
4. Select the **Mappings** connector.
5. In the **OpenSession** method, use the dimension name without _D for the global variable names and the input parameter.
6. At the root level, AMCONTRACT_D in this example, define the mapping scripts as:

   ```
   g_tableName = "AMCONTRACT"
   Dim etlStatus as string
   etlStatus=RetETLStatus()
   ```

   You need to change only the g_tableName based on the dimension name without _D.

Functions for Dimension Attributes

The following functions use the CONTACT_D table. Replace **`contact`** with the proper dimension table name.

Table 17 Dimension data warehouse attributes

Attribute	Function
Z_ETLSTATUS field	`g_ETLProcess_Status`
Z_RDSACTIVESTATUSIND field	`"Y"`

Z_RDSCONTACT_DID system unified sequence key	`newID=RetRDSDID(g_lMaxCounter_contact)`
	`if newID > g_lMaxCounter_contact then`
	`  g_lMaxCounter_contact = newID`
	`end if`
	`retval = newID`

Z_RDSCREATEDDATE field	`retval = RetRDSCreateDateAll()`
Z_RDSLASTMODDATE field	`retval = RetRDSLastModDateAll()`
Z_RDSTRANSLASTIND field	`"Y"`

Complete Dimension Table Mappings

You can create mappings for the dimension element from the appropriate ServiceCenter source fields. Make sure that you define the ServiceCenter `sysmodtime` file for more efficient data synchronization.

Start the dimension primary key by using the unique key fields and data warehouse system unified sequence key field Z_RDSXXX_DID. The dimension name is XXX_D.

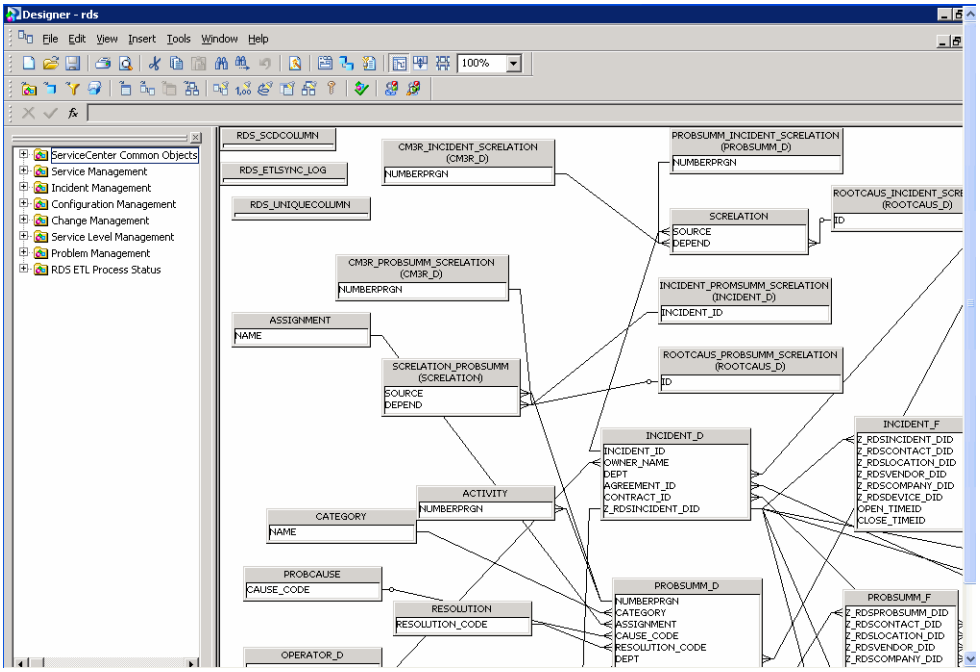
Viewing the Data Warehouse Universe

You can use the Business Objects designer tool to customize the data warehouse universe. See the Business Objects documentation for developing your own universes. You can also create a report of the universe contents that shows the existing tables and objects.

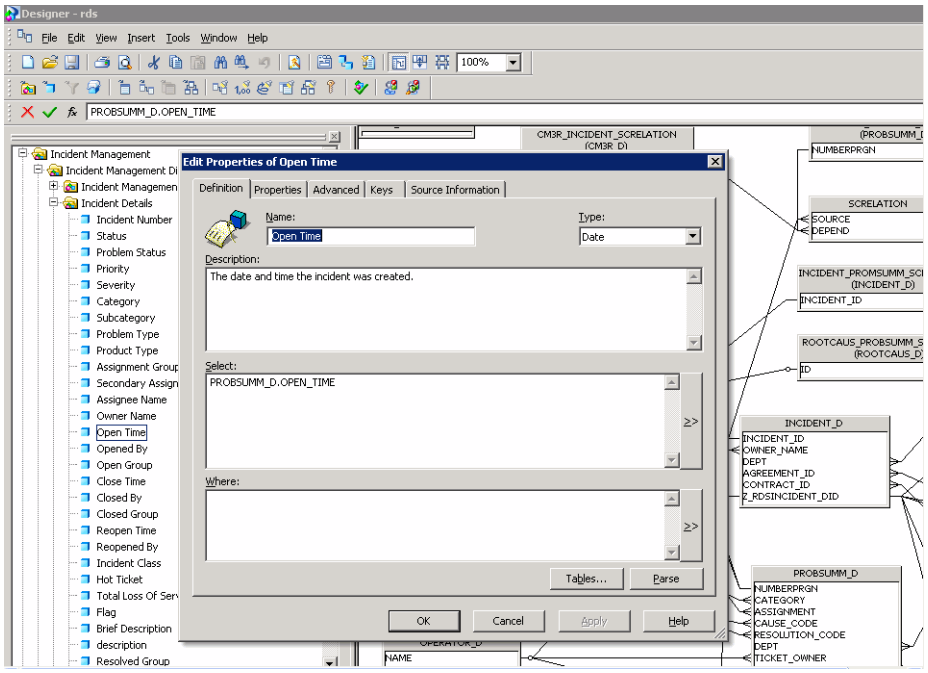
You must have administrator access rights to change the universe.

1. From the Windows **Start** menu, click **Programs > BusinessObjects XI Release 2 > BusinessObjects Enterprise > Designer**.
2. Log on as the designer user (**Administrator**).

3 Click **File > Open** and navigate to **ITPA Service Management**. The default path is: \\...\<*Business Objects*>\Universes. The following diagram shows the data warehouse universe for ServiceCenter.



4 Open the object properties to determine the object definitions for the data warehouse data sources. The following diagram shows the **Open Time** object where OPEN_TIME is the data source field in the PROBSUMM_D table.



Types of Changes to an Existing Universe

The Business Objects Designer tool enables you to make the following types of changes to an existing universe:

- Add tables to the universe structure.
- Insert joins and set cardinalities.
- Detect aliases.
- Detect contexts.
- Create new objects.
- Set up Hierarchies.

Impact of Universe Changes

The changes you make to the universe impact your schema and existing documents.

Table 18 Impact of Universe Changes

Change Element	Description
Schema	• Enhanced Impact: — Adding new columns — Adding new tables • Severe Impact: — Renaming or moving the database — Changing existing column and table names — Deleting tables and columns
Existing Document	• No Impact: — Redefining Object SQL — Renaming an Object — Copying to a different class — Moving in the same class or to a different class — Adding new objects • Impact: — Deleting an existing object — Deleting and then recreating an object with exactly the same definition

Universe Customization Tips

The following suggestions can improve the performance of your universe customization:

- Modify the Array Fetch parameter in **Universe Parameters**.
- Use shortcut joins.
- Create and use aggregate tables in your database.

5 Migrate Reports and Universes

The information in this chapter is for advanced users who customized DecisionCenter out-of-box reports or universes. Prior to migrating the content, you must save existing reports and universes.

See the Business Objects documentation for information about backing up your Business Objects repositories and migrating customized reports or universes that you need in DecisionCenter 2.00.

Migrating customized data requires advice from HP Support and may require assistance from HP Professional Services personnel. For more information visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport/

Migration Checklist

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new features in DecisionCenter 2.00.

Print this checklist to use during the migration process. As you complete each task, mark it finished.

- ☐ Task 1: Back Up the Business Objects Databases on page 48
- ☐ Task 2: Save the Customized Files on page 48
- ☐ Task 3: Delete the Original Folders and Content on page 48
- ☐ Task 4: Install DecisionCenter 2.00 ITPA Content on page 48
- ☐ Task 5: Complete the Migration on page 49
  - — Step 1: Add Security on page 49
  - — Step 2: Apply Customizations on page 49

Task 1: Back Up the Business Objects Databases

Always back up your existing files, folders, sub-folders, and databases to avoid overwriting the information.

1. Make sure that you have appropriate administrative access rights in Business Objects.
2. Back up the Central Manager Server database (cmsdb) from Oracle or SQL Server.
3. Back up the Performance Management database (pmdb), if needed.

Task 2: Save the Customized Files

Follow the steps in the next section to identify the customized out-of-box reports and prepare them for migration.

1. If needed, create a temporary folder for the customized reports. The temporary folder must not be a DecisionCenter default folder. For example, **DCStagingFolder**.
2. From Business Objects InfoView, open the report.
3. Click **Properties**.

   The report displays a create date and last modified date.
4. Click **Save as** to save the customized reports to the temporary folder. Make sure that you save all drills and links.
5. Repeat Step 2 through Step 4 for each report.

Task 3: Delete the Original Folders and Content

From Business Objects, use either InfoView or Central Management Console to delete the original folders, including all the content. A complete installation includes:

ITPA Asset Management
ITPA Help Desk
ITPA Incident
ITPA Service Level Management
BIA Business Impact

Task 4: Install DecisionCenter 2.00 ITPA Content

Follow the steps in the next section to install the DecisionCenter IT Performance Analytics content that includes universes and reports for ServiceCenter and AssetCenter. See the *DecisionCenter Installation Guide* for detailed information.

1. Install the ITPA content.
2. Import the reports and universes.
3. Update the universe database connections.

4 Run the PMDT tool.

5 Add and update the metric universes in Performance Management.

6 Refresh the metrics.

Task 5: Complete the Migration

Follow the steps in the next section to finalize the migration.

You can prevent users from overwriting the out-of-box reports by applying security access settings. To adhere to best practices, save a copy of the out-of-box reports to another folder, and then modify the copy.

Step 1: Add Security

1 With the BusinessObjects Enterprise Central Management Console, set folder security access to prevent users from overwriting out-of-box reports.

   a Click **Start > Programs > Business Objects XI Release 2 > BusinessObjects Enterprise > BusinessObjects Enterprise Java Administration Launchpad**.

   b Click **Central Management Console**.

   c Log on as **Administrator**.

   d Select **Folders > Folder Title** (for example, ITPA Service Management).

   e Click the **Rights** tab.

   f In the Access Level column next to the user or group, select **Advanced** from the drop-down menu.

   g On Advanced Rights, change the Advanced Access Level setting for **The Right To**:

   Copy object to another folder, select **Explicitly Granted**.

   Edit objects, select **Explicitly Deny**.

2 Apply additional security as needed to the new reports and folder structure in Business Objects. See the Business Objects documentation for detailed information.

Step 2: Apply Customizations

1 With BusinessObjects Enterprise InfoView, add changes from your DecisionCenter 1.00 customized reports to the newly installed reports.

2 With BusinessObjects Enterprise Designer, add changes from DecisionCenter 1.00 customized universes to the newly installed universes.

6 Business Impact Analysis Migration

You can migrate your out-of-box or customized Business Impact Analysis (BIA) module to be compatible with a DecisionCenter 2.00 installation. The installer maintains the previous version so that you can merge any changes in your files with the new installation.

Migrating customized data requires advice from HP Support and may require assistance from HP Professional Services personnel. For more information visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport/

Migration Checklist

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new features in DecisionCenter 2.00.

Print this checklist to use during the migration process. As you complete each task, mark it finished.

- ☐ Task 1: Back Up Existing Files on page 51
- ☐ Task 2: Upgrade the Database on page 52
- ☐ Task 3: Run the DecisionCenter 2.00 Installer on page 52
- ☐ Task 4: Configure the Files on page 52
  - — Step 1: Update database.properties on page 52
  - — Step 2: Update process.properties on page 53
  - — Step 3: Update log4j.xml on page 53
  - — Step 4: Update querydefinitions.xml on page 53
  - — Step 5: Update mssql_templates.sql on page 53
- ☐ Task 5: Complete the Migration on page 54

Task 1: Back Up Existing Files

1. From HP Connect-It Scenario Builder, stop the scenario scheduler.
2. Back up BIA existing files. The default location is:

   \\Program Files\HP OpenView\DC\BIA

Task 2: Upgrade the Database

- From the DecisionCenter installation media \SupportFiles\Database directory, run the database upgrade script:

  `upgrade_rds_bia_mssql_1.0_2.0.sql`

The script creates the **PREP_BUSINESS_SERVICE_V** view, which defines the devices that business services will consider. DecisionCenter 1.00 defined the out-of-box business services as devices using BS as the logical name prefix. To be consistent with ServiceCenter 6.2 and Service Manager 7.0, DecisionCenter 2.00 defines the business services as devices with the type **bizservice**.

To adhere to best practices, set up your ServiceCenter data to match this definition of business services. If necessary, you can modify the **PREP_BUSINESS_SERVICE_V** view to use your own criteria to ensure that this definition is associated with all data mining activities.

Task 3: Run the DecisionCenter 2.00 Installer

Follow the steps in the *DecisionCenter Installation Guide* to install the BIA application.

Task 4: Configure the Files

You must manually merge the changes from your DecisionCenter 1.00 files with the newly installed files. Make sure that you have appropriate access rights to the files. Use a text editor or XML parser to configure the files.

Step 1: Update database.properties

You must update this file only if you changed the default connection options.

DecisionCenter 2.00 does not support the Sprinta driver for Microsoft SQL Server.

1. Open the file with a text editor. The default location is:

   \\…\DecisionCenter 2.00\BIA\DataMining\config\database.properties

2. Merge changes from the old file to the new file. If you changed specific database connection options, add them to the file.
3. Save and close.

Step 2: Update process.properties

The DecisionCenter 2.00 file has one new property with the corresponding comment:

```
# Portion of work time effectively spent on incidents. It must be a
# number > 0 (no time spent on incident) and <= 1 (full time spent on
incidents).

operator.focus_factor=.75
```

1. Open the file with a text editor. The default location is:

   \\…\DecisionCenter 2.00\BIA\DataMining\config\process.properties

2. Merge your changes from the old file to the new file.
3. Save and close the file.

Step 3: Update log4j.xml

1. Open the file with a text editor or XML parser. The default location is:

   \\…\DecisionCenter 2.00\BIA\config\log4j.xml

2. Merge your changes from the old file to the new file. Or, overwrite the new file with the old one, then update the **File** property of the different appenders to point to the \logs folder. For example, change the hibernate log from

   ```
   <param name="File" value="hibernate.log"/>
   ```

   to

   ```
   <param name="File" value="…/logs/hibernate.log"/>
   ```

3. Save and close the file.

Step 4: Update querydefinitions.xml

The out-of-box querydefinitions.xml file has one fewer bean definition.

1. Open the file with a text editor or XML parser. The default location is:

   \\…\DecisionCenter 2.00\BIA\config \querydefinitions.xml

2. Merge your changes from the old file to the new file. Or, overwrite the new file with the old one, then delete the **ttniProbsummQuery** bean by removing this code:

   ```
   <!-- Query definition for the PROBSUMM_D table -->
   <bean id="ttniProbsummQuery" parent="queryTemplate">
    …
   </bean>
   ```

3. Save and close the file.

Step 5: Update mssql_templates.sql

The **startSet** date parameter defines the **PREP_PROBSUMM_V** view. All incidents created or updated on or after this date are tracked for history.

Make sure that you:

- Use the new file.
- Set this parameter to a value that corresponds to your current data set.

Task 5: Complete the Migration

The old data_mining.bat command file is now bia_datamining.bat. If you configured the batch file in DecisionCenter 1.00, you must move the configuration parameters to the new file.

1. Merge the configuration parameters from data_mining.bat to bia_datamining.bat. The default location is:

   \\…\DecisionCenter 2.00\BIA\bin\

2. From HP Connect-It Scenario Builder, apply changes from the previous dco_sc.scn and dco_rds.scn scenarios to the newly installed files.

To adhere to best practices, document customizations that you make to the scenarios to ease the migration in future releases.

3. From the Windows **Start** menu, click **Control Panel > Add or Remove Programs** to uninstall the DecisionCenter 1.00 BIA module. If necessary, manually delete the old folder.

7 Migrate the Optimization Engine

You can migrate your out-of-box or customized DecisionCenter Optimization engine to be compatible with a DecisionCenter 2.00 installation. The installer maintains the previous version so that you can merge any parameter changes in your files with the new installation.

Migrating customized data requires advice from HP Support and may require assistance from HP Professional Services personnel. For more information visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport/

Migration Checklist

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new features in DecisionCenter 2.00.

Print this checklist to use during the migration process. As you complete each task, mark it finished.

- ☐ Task 1: Back Up Existing Files on page 55
- ☐ Task 2: Run the DecisionCenter 2.00 Installer on page 55
- ☐ Task 3: Configure the Files on page 56
  - — Step 1: Copy jmx.properties and priority.properties on page 56
  - — Step 2: Update database.properties on page 56
  - — Step 3: Update log4j.xml on page 56
- ☐ Task 4: Complete the Migration on page 57

Task 1: Back Up Existing Files

1. From the command line window running the Optimizer, click **Ctrl+C** to stop the engine.
2. Back up the Optimization existing files. The default location is:

   \\Program Files\HP Openview\DC\Optimization

Task 2: Run the DecisionCenter 2.00 Installer

Follow the steps in the *DecisionCenter Installation Guide* to install the Optimizer engine.

Task 3: Configure the Files

You must manually merge the changes from your DecisionCenter 1.00 files with the newly installed files. Make sure that you have appropriate access rights to the files. Use a text editor or XML parser to configure the files.

Step 1: Copy jmx.properties and priority.properties

1. Copy the old jmx.properties file from
   \\Program Files\HP OpenView\DC\Optimization\config\jmx.properties to
   \\Program Files\HP\DecisionCenter 2.00\Optimization\config\jmx.properties
2. Copy the old priority.properties file from
   \\Program Files\HP OpenView\DC\Optimization\config\priority.properties to
   \\Program Files\HP\DecisionCenter 2.00\Optimization\config\priority.properties

Step 2: Update database.properties

You must update this file only if you changed the default connection options.

DecisionCenter 2.00 does not support the Sprinta driver for Microsoft SQL Server.

1. Open the file with a text editor. The default location is:

   \\…\DecisionCenter 2.00\Optimization\config\database.properties
2. Merge changes from the old file to the new file. If you changed specific database connection options, add them to the file.
3. Save and close.

Step 3: Update log4j.xml

The out-of-box log4j.xml file contains new elements that help redirect information messages to the console.

1. Open the file with a text editor or XML parser. The default location is:

   \\…\DecisionCenter 2.00\Optimization\config\log4j.xml
2. Merge your changes from the old file to the new file. Make sure that you keep the new elements.
   - A new **appender** (logger) describes how to log the information to the console.

```
<!-- Datamining additional appender -->
 <appender name="datamining" class="org.apache.log4j.ConsoleAppender">
    <layout class="org.apache.log4j.PatternLayout">
      <param name="ConversionPattern" value="%m%n" />
    </layout>
 </appender><param name="File" value="hibernate.log"/>
```

- Two new category elements direct the information from the time to next incident tool to the new datamining appender.

```
<!-- data mining -->
<category

name="com.peregrine.decisioncenter.optimization.engine.model.support.ttni">
 <priority value="info" />
 <appender-ref ref="datamining" />
</category>

<category name="com.peregrine.decisioncenter.optimization.tools">
 <priority value="info" />
 <appender-ref ref="datamining" />
</category>
```

3 Save and close the file

Task 4: Complete the Migration

The old data_mining.bat command file is now bia_datamining.bat. If you configured the batch file in DecisionCenter 1.00, you must move the configuration parameters to the new file.

1 Merge run_optimizer.bat changes with the new file. The default location is:

\\…\DecisionCenter 2.00\Optimization\bin\run_optimizer.bat

2 Configure the new common.properties and optimizer.properties files. See the *DecisionCenter Installation Guide* for information about configuring the files.

3 If you need to set additional JVM parameters, update the new opt_datamining.bat file with the changes. The default location is:

\\…\DecisionCenter 2.00\Optimization\bin\opt_datamining.bat

4 From the Windows **Start** menu, click **Control Panel > Add or Remove Programs** to uninstall the DecisionCenter 1.00 Optimization engine. If necessary, manually delete the old folder.

A Customization Planning

Planning the customization implementation is critical when you change the schema or DecisionCenter Analytics reporting content. A successful plan requires these actions:

- Define the requirements analysis of reports and systems such as data sources, version, and data volume.
- Install DecisionCenter in a test environment that includes configuring DecisionCenter and creating reports based on the requirements.

By editing the out-of-box data warehouse rds_etl.xml file, you can customize the data warehouse schema. When you edit any XML file, use an XML editor tool such as XML Spy, which validates your changes against the schema file. See the *Data Warehouse Administration Online Help* topics for more information about customization guidelines. See *Best Practices for Data Warehouse Administration Guide* for information about optimizing the data warehouse performance.

Advanced data warehouse customization requires advice from HP Support and may require assistance from HP Professional Services personnel. For more information visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport/

Customization Checklist

The specific tasks to customize DecisionCenter Analytics include modifying the schema, Connect-It scenarios, and the universe. Complete all the tasks to implement the plan.

Print this checklist to use during the planning process. As you complete each task, mark it finished.

- ☐ Task 1: Review Current System and Report Requirements on page 61
- ☐ Task 2: Customize the Schema on page 61
  - — Step 1: Back Up Existing Files on page 61
  - — Step 2: Modify and Verify the Schema on page 62
  - — Step 3: Run the rds_init Utility on page 63
- ☐ Task 3: Customize the Connect-It Scenario on page 64
  - — Step 1: Modify Data Warehouse Connect-It Scenarios on page 64
  - — Step 2: Test the Scenario on page 67
  - — Step 3: Review Global Functions on page 68
- ☐ Task 4: Customize the Universe on page 68
  - — Step 1: Generate the Universe Report on page 68
  - — Step 2: Check Data Integrity on page 69
  - — Step 3: Modify the Universe on page 69
  - — Step 4: Export the Universe on page 70
- ☐ Task 5: Implement the Changes in a Test Environment on page 71
- ☐ Task 6: Map and Test the Tailored Data Schema on page 71
- ☐ Task 7: Deploy to a Production Environment on page 72
- ☐ Task 8: Continue to Customize Your Environment on page 72

Task 1: Review Current System and Report Requirements

When planning, allow one to three days to complete this task.

- Step 1: Review current system and overall DecisionCenter Analytics deployment environment.
- Step 2: Verify assumptions and gather requirements, such as data sources, ServiceCenter version, data volume, and synchronization back point.

Task 2: Customize the Schema

You can customize the data warehouse schema by editing the out-of-box rds_etl.xml file. When customizing any XML file, use an XML editor tool such as XML Spy, which validates your changes against the schema file. The instructions to add tables and fields are available in the *DecisionCenter Data Warehouse Administration Online Help*.

If you customized the schema, see Appendix B, Schema Changes for DecisionCenter updates that reflect new tables and changes to existing tables in the data warehouse.

Step 1: Back Up Existing Files

1. Stop the data warehouse Connect-It scenario from the Connect-It Service Console.

   For ServiceCenter, the scenario is rds_sc.

   For AssetCenter, the scenario is rds_ac.

2 Back up the existing data warehouse, files, folders, and sub-folders in the original data warehouse location.

rds_etl.xml (ServiceCenter)

rdsac_etl.xml (AssetCenter)

rdbms_keywords.xml

rds_sc.scn (ServiceCenter)

rds_ac.scn (AssetCenter)

For DecisionCenter with ServiceCenter, the default location is:
\\Program Files\HP OpenView\DC\RDS_SC

For DecisionCenter with AssetCenter, the default location is:
\\Program Files\HP OpenView\DC\RDS_AC

3 Back up the existing data warehouse database in Oracle or Microsoft SQL Server.

Step 2: Modify and Verify the Schema

This file defines the structure of all fields and tables in the schema. Add or edit objects as required. To adhere to best practices, do not delete objects. The HP Connect-It scenario and Business Objects universe deal with unused and obsolete structures.

1 Open the file with a text editor or XML parser. The default location is:

\\Program Files\HP\DecisionCenter 2.00\ITPA-SM\rds_etl.xml
\\Program Files\HP\DecisionCenter 2.00\ITPA-AM\rdsac_etl.xml

2 Modify the file as needed. See Appendix B, Schema Changes for more detailed information.

This file defines the structure of all fields and tables in the schema. Add or edit objects as required. To adhere to best practices, do not delete objects. The HP Connect-It scenario and Business Objects universe deal with unused and obsolete structures.

3 Validate your changes against the XML file.

Step 3: Run the rds_init Utility

After you edit and validate your XML file, you must run the rds_init utility to build or edit the database schema. You can use the utility to start the RDSInitRun command, which causes the changes you make in the default rds_etl.xml file to take effect.

If you are running a clean installation, run the utility:
\\Program Files\HP\DecisionCenter 2.00\ITPA-SM\common \bin\rds_init.bat

Do not run this file if you are updating an existing data warehouse because it will delete and recreate all the tables.

If you are migrating from an existing data warehouse, make sure that you add all the appropriate attributeAction tags to any objects you altered or added, then run the batch file:

\\Program Files\HP\DecisionCenter 2.00\ITPA-SM\common\bin \rds_sc61_migrate.bat

The rds_init program generates two output files in the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\logs directory.

Table 19 Output Files

File Name	Description
rds_etl_init.log	Stores all the executed SQL statements.
rds_etl_init.err	Tracks all the error messages.

If the ERR file size is not 0, check the error messages, correct the problem, and rerun the program.

Task 3: Customize the Connect-It Scenario

The data warehouse uses HP Connect-It scenarios to synchronize data. You can customize the AssetCenter and ServiceCenter scenario mappings with Connect-It Scenario Builder. If you customized the scenario, see Appendix C, Scenario Changes for DecisionCenter changes made to the Connect-It scenario.

After you modify and verify the scenario, you must run the scenario in a test or production environment, and review global functions.

Step 1: Modify Data Warehouse Connect-It Scenarios

Changes to the scenario require several tasks that involve modifying and verifying the schema.

To modify the scenario

1. Click **Start > Programs > HP OpenView > Connect-It 3.8 en > Connect-It Scenario Builder**.
2. Click **File > Open** and navigate to rds_sc.scn.
3. Select a connector.
4. Select the **Document Types** tab.
5. Modify the Data sources document type.
6. Modify the produced document types:
   - Dimension tables mapping scripts.
   - Direct mapping tables mapping scripts.
7. Run the modified Connect-It scenario in your test or production environment.

To open the scenario to verify the schema

1. Open the Windows command prompt.
2. Change to the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\common\bin directory.

3 Run the test_rdssc.bat command.

4 Check the test_rdssc.log log file in \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\logs

The file contains the synchronization activity records.

5 Search for the string **-53**.

- If you do not find -53, the verification is successful.
- If you find -53 or -XX, errors, confirm that the connectors' configuration information is correct by verifying config_rdssc.txt in the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit directory. The rds_init program must be error-free before you can run the Connect-It scenario.

To reconfigure the connectors that fail to connect

1 With a text editor, modify the content of config_rdssc.txt in the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit directory.

2 Open the Windows command prompt.

3 Change to the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\common\bin directory.

4 Run the following commands and check the corresponding log files in the \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\logs directory. Make sure the test log files have **successful** in the last line.

- upd_rdssc.cmd
- test_rdssc.cmd

To verify the schema

1 Back up rds_sc.scn. The default path is: \\Program Files\HP\DecisionCenter 2.00\ITPA-SM\cit

2 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

3 Click **File > Open** and navigate to **rds_sc.scn**.

4 Click **Scenario > Open all connectors** to ensure that you configured the connectors correctly.

5 Click the **Mapping** connector.

6 Select the **Mappings** tab.

7 Select any predefined mapping; for example, select **contactSrc CONTACT_DDst to CONTACT_D (CONTACT_DDst)**.

8 Click the **Edit a mapping** icon.

The verification is successful if no schema error window appears. If not successful, copy the schema errors to Notepad and save as a text file for later use.

To modify data sources document types

If you have schema verification errors, or if you need to map new ServiceCenter files or fields to the data warehouse, modify the data sources.

1 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

2 Click **File > Open** and navigate to **rds_sc.scn**.

3 Click **Scenario > Open all connectors**.

4 Select the **ServiceCenter** connector.

5 Select the **Document Types** tab.

6 Modify **Produced document types** for the updates or error ServiceCenter files by removing, updating, or adding the tables.

To modify produced data sources for data warehouse tables

1 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

2 Click **File > Open** and navigate to **rds_sc.scn**.

3 Click **Scenario > Open all connectors**.

4 Select the **RDS** connector.

5 Select the **Document Types** tab.

6 Modify **Produced document types** for the updates or error data warehouse tables by removing, updating, or adding tables.

To modify the mapping scripts

1. From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.
2. Click **File > Open** and navigate to **rds_sc.scn**.
3. Click **Scenario > Open all connectors**.
4. Select the **Mapping** connector.
5. Select the **Mappings** tab.
6. Click the **Edit the mapping** icon.

Step 2: Test the Scenario

Before you run the new scenario through the Connect-It service console, test the scenario from Connect-It Scenario Builder.

1. From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.
2. Click **File > Open** and navigate to **rds_sc.scn**.
3. Click **Scenario > Open all connectors**.
4. Check or clear the tables that you want to include in the synchronization.
   a. From the **ServiceCenter** connector, click **Document Types** and check or clear the tables from **Produced document types**.
   b. From the **Mapping** connector, click **Mappings** and check or clear the tables from **Source/Mapping**.
   c. From the **Mapping** connector, click **Document Types** and check or clear the tables from **Produced document types**.
5. Set the condition.
   a. From the **ServiceCenter** connector, click **Produced document type**, then click **Edit produced document type**.
   b. Add the condition to the WHERE clause. For example:

      ```
      sysmodtime > '11/15/03'
      ```
6. Click **Tools > Produce now** to test the modified scenario.
7. Validate the data and log file to ensure that you have no -xx errors.

8 Click **Scenario > Scheduling** to modify the scheduling if you have new mapping data sources.

9 Start the **rds_sc** service through the Connect-It Service Console.

Step 3: Review Global Functions

You can use predefined data warehouse global functions for data warehouse scenario mapping scripts.

1 From the Windows **Start** menu, click **Programs > HP Openview > Connect-It 3.8 en > Scenario Builder**.

2 Click **File > Open** and navigate to **rds_sc.scn**.

3 Click **Scenario > Global functions**.

4 Select the **rds.bas** script.

To ensure that the data warehouse Connect-It global functions work, you must name the data warehouse connector RDS.

Task 4: Customize the Universe

The universe is the metadata layer that contains data attributes and data structures. You can use the Business Objects Designer tool to customize the universe (UNV) file. Before you customize the customize, you can create a report of the universe contents that details the existing tables, objects, formulas for the objects, and joins for the universe.

Step 1: Generate the Universe Report

You can create a report of the universe contents with the Designer tool. The Portable Document Format (PDF) report produces the universe metadata.

1 From the Windows **Start** menu, click **Programs > BusinessObjects XI Release 2 > BusinessObjects Enterprise > Designer**.

2 Log on as the **Administrator** designer user.

3 Click **File > Open** and navigate to the universe. The default path is: \\Program Files\Business Objects\BusinessObjects Enterprise 11.5 \FileStore\Input.

4 Click **File > Save As**.

5 From the **Save as types** drop-down list, select **Portable Document Format (*.pdf)** and type the file name and location.

6 Click **Save**.

7 Click **Tools > Options > Print/PDF** to select the universe data that you want to review.

Step 2: Check Data Integrity

After you modify the data warehouse universe, make sure to perform an integrity check to detect any join loops or context errors.

1 From the Windows **Start** menu, click **Programs > BusinessObjects XI Release 2 > BusinessObjects Enterprise > Designer**.

2 Log on as the **Administrator** designer user.

3 Click **Tools > Check Integrity**.

4 Select **Check All**.

5 Click **OK**. The utility scans the universe and suggests potential problems.

6 Correct any problems.

7 Save your changes.

Step 3: Modify the Universe

Because DecisionCenter Analytics sample reports use the out-of-box data warehouse universe, limit your changes to the examples in the following section. See Universe Customization Tips on page 45 for some tips about customizing the universe.

For more information about universe changes, see the *Business Objects Designer Guide*.

To change the sample universe

After you modify the data warehouse universe, make sure to perform an integrity check to detect any join loops or context errors.

1. From the Windows **Start** menu, click **Programs > BusinessObjects XI Release 2 > BusinessObjects Enterprise > Designer**.
2. Log on as the **Administrator** designer user.
3. Click **Tools > Connections** to change an existing connection or create a new connection.
4. Refresh the database structure and perform an integrity check.
5. Limit your universe changes to:
   - Table and joins
   - Context
   - Alias
   - Class/objects (Description, SQL and Where)
   - Aggregation

Step 4: Export the Universe

After you modify the data warehouse universe, export the universe to the universe domain to have the new universe take effect.

1. From the Windows **Start** menu, click **Programs > BusinessObjects XI Release 2 > BusinessObjects Enterprise > Designer**.
2. Click **File > Export**.
3. From the **Domain** drop-down list, select your domain.
4. In the **Groups** list, select an application group.
5. Click **OK** to export the universe to the application group. You see a message indicating that the export is successful.

Task 5: Implement the Changes in a Test Environment

When planning, allow one to five days to complete this task.

- Step 1: Install DecisionCenter Analytics with a typical configuration on the test servers.
- Step 2 Configure all components to start DecisionCenter Analytics.
- Step 3: Create a test DecisionCenter Analytics user account with logon rights.

For more information, see the *DecisionCenter Installation Guide*.

Task 6: Map and Test the Tailored Data Schema

When planning, allow three to 12 days to complete this task.

- Step 1: Customize the DecisionCenter Analytics data schema and synchronization.
- Step 2: Test the following:
  - Schema difference checking based on your ServiceCenter schema
  - Customization for changed fields
  - Data warehouse schema updates
  - Connect-It scenarios updates
  - Universe updates
  - Connect-It data warehouse scenario execution
  - Report creation for three to five reports

For more information, see the *DecisionCenter Installation Guide*.

Task 7: Deploy to a Production Environment

See the *DecisionCenter Installation Guide* for information about running the installer to get the latest files that you need to take advantage of the new DecisionCenter Analytics features.

Task 8: Continue to Customize Your Environment

Customization is an ongoing process. To adhere to best practices, always back up your files before you make changes to schemas, scenarios, and universes.

B Schema Changes

Schemas contain information from tables in the data warehouse. If you changed your schemas, you need to be aware of changes that may affect your customizations.

DecisionCenter 1.00 Table Changes

The following section identifies ServiceCenter data warehouse table changes in the rds_etl.xml file. There are no changes to AssetCenter.

The following tables contain schema updates that reflect new tables and changes to existing tables in the DecisionCenter data warehouse.

Table 20 New Tables

Table Type	Table Name
Dimension	DEVICEGROUP_D DEVICEGROUPMAP_D DEVICEGROUPMAP_F CIRELATIONSHIP_D REQUEST_D REQUEST_F REQLINE_D REQUEST_F BISVCCART_D BISVCCARTITEM_D
DirectMapping	BIZSERVICE REQ_APPROVALLOG SERVICE_CATALOG

Table 21 Updates to Existing Dimension Tables

Table	Updated Information
INCIDENT_D	<dimensionTableField name="SVCCART_CARTID" type="char" size="30" attributeAction="add"/> <dimensionTableField name="SVCCART_COST" type="float" attributeAction="add"/> <dimensionTableField name="APPROVAL_STATUS" type="char" size="60" attributeAction="add"/> <dimensionTableField name="APPROVED_COUNT" type="float" attributeAction="add"/>
CM3R_F	Changed <factKey name="date_enteredID" fieldName="date_entered" tableName="RDS_TIMEDIM_D" matchFieldName="FULLDATE"/> To: <factKey name="PLANNED_STARTID" fieldName="PLANNED_START" tableName="RDS_TIMEDIM_D" matchFieldName="FULLDATE"/>
OUTAGE_D	<dimensionTableField name="RELATED_TO_CHANGE" type="char" size="1" attributeAction="add"/> <dimensionTableField name="RELATED_TO_INCIDENT" type="char" size="1" attributeAction="add"/>
OUTAGEEVENT	<directMappingField name="REFERENCE_KEY_NODEP" type="char" size="40" attributeAction="add"/>

C Scenario Changes

Scenarios contain information from tables in the data warehouse. If you customized your scenario, you must merge the changes with your modified scenario.

DecisionCenter 2.00 Scenario Changes

The new structures needed to support ServiceCenter 6.2 and Service Manager 7.0 required several changes to the Connect-It scenario.

Table 22 Scenario Changes

Change Type	Affected Table	Change
Modified Document	INCIDENT	Added fields: • svcCart.cartId • svcCart.cost • approval.status • approved.count `(if (['approval.status'] = ”approved”) then retVal=”1” else retVal=”0” end if)`
	OUTAGEEVENT	Added fields: • reference_key_nodep `RetVal = Replace(RightPart(['record.tag'], ”;”, 0),”DEP”,””,0)`

Table 22 Scenario Changes

Change Type	Affected Table	Change
Added Document	DEVICEGROUP	Added fields from cigroup: • logical.name • baseline.version.version.number Added fields from cigroupStage: • sysmodtime • sysmoduser • TopCIGroup • TopCIVersion
	DEVICEGROUPMAP	Added fields from cigroupStage: • cigroupStage • leafmemberci • sysmodtime • sysmoduser
Added Document	DEVICEPARENT	Added fields from cirelationshipBSStage: • childCI • nbrLvl • outage.threshold • parentCI • sysmodtime • sysmoduser
	CIRELATIONSHIP	Added fields from cirelationshipStage: • ChildCI • CIRelationshipName • CIRelationshipSubtype • CIRelationshipType • outage.dependency • outage.threshold • PhysicalParentCI • sysmodtime • sysmoduser

Table 22 Scenario Changes

Change Type	Affected Table	Change
Added Document	REQUEST	Added fields from default 'REQUEST' ocmq • approval.status • assigned.dept • close.date • submit.date • priority • requested.for • number • requestor.name • status • sysmodcount • sysmodtime • sysmoduser • total.cost • update.date Added fields if coming from 'CATALOG' of a request. This is turned off by default. svcCart • cartId • interaction.'approval.status' • interaction.'assignment', 'assignment' • interaction.'close.time' • interaction.'priority.code' • interaction.'contact.name' • sdID • interaction.'callback.contact' • interaction.severity • interaction.open • interaction.'open.time' • interaction.sysmodcount • interation.sysmodtime • interaction.sysmoduser • cost • intereaction.'update.time'

Table 22 Scenario Changes

Change Type	Affected Table	Change
Added Document	REQLINE	Added fields from default 'REQUEST' ocml • unit.cost • status • category • number • part.desc • phase.num • quantity • ocmq.'requested.for' • ocmq.number • ocmq.'requestor.name' • 'submit.date' • sysmodcount • sysmodtime • sysmoduser Added fields if coming from 'CATALOG' of a request. This is turned off by default. svcCartItem • svcCatalogId • cost • status • svcCatalog.parent • cartItemId • item.description • cartItemId • quantity • requested.for • sdID • requested.by • sla.breach • request.time • sysmodcount • sysmodtime • sysmoduser

Table 22 Scenario Changes

Change Type	Affected Table	Change
Added Document	BIZSERVICE	Added fields: • logical.name • problem.manager • sysmodcount • sysmodtime • sysmoduser
	REQ_APPROVALLOG	Added fields: • date • group • name • counter • file.name • unique.key • sysmodcount • sysmodtime • sysmoduser
	SERVICE_CATALOG	Added fields: • active • description • id • name • non.cart • owner • parent • sysmodcount • sysmodtime • sysmoduser • type