Peregrine

ServiceCenter

Integration for Tivoli Enterprise Data Warehouse

Release 1.0

PART NO: DSC-1-EN51

Peregrine SYSTEMS®

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Contents

About this Guide

This guide describes the Tivoli Enterprise™ Data Warehouse enablement pack, version 1.1 (the *warehouse pack*). The warehouse pack is used with Peregrine Systems® ServiceCenter® version 5.1.

You use the warehouse pack to store ServiceCenter data in the Tivoli® Data Warehouse.

Topics in this preface include:

What is in this guide

This guide provides information about:

- Installing and configuring the warehouse pack
- Data flows in the warehouse pack
- Data structures that the warehouse pack uses

This guide includes the following chapters:

- *Chapter 1, Overview* — provides an overview of Tivoli Enterprise Data Warehouse and the warehouse pack, including mapping information.
- *Chapter 2, Installation and Setup* — provides information about installing and configuring the warehouse pack. Specifies prerequisite software installations, and includes information about database sizing.
- *Chapter 3, Transforming ServiceCenter Data* — includes information about transferring data on your production system. Outlines the steps you take after loading new data into the central data warehouse, and provides instructions for maintaining the data after you load it.
- *Chapter 4, Central Data Warehouse Schema Implementation* — provides information about which data should go into the incident and change database tables, and which data should go into ServiceCenter fields.

A note about examples

The examples included in this guide are for illustration only, and may differ from those at your site.

Who should read this guide

This guide is for people who:

- Plan for and install the warehouse pack
- Use and maintain the warehouse pack and its reports
- Create new reports
- Create additional warehouse packs that use data from this warehouse pack

Knowledge requirements

Administrators and installers should have the following knowledge or experience:

- Basic system administration and file management skills
- Basic relational database management skills
- IBM DB2 Universal Database management skills
- ServiceCenter administration experience
- Connect-It administration experience
- Tivoli Enterprise Data Warehouse administration experience

Report designers and warehouse pack creators should have the following knowledge or experience:

- An understanding of the source data and application
- Data warehouse information and design
- Knowledge of extract, transform, and load (ETL) processes
- Knowledge of online analytical processing (OLAP)

Related documentation

See the following sections for information about documentation that helps you understand, install, and manage the warehouse pack:

- *Peregrine documentation* on page 9
- *Tivoli Enterprise Data Warehouse documentation* on page 11
- *IBM DB2, DB2 Data Warehouse Center, and DB2 Warehouse Manager Documentation* on page 14

Peregrine documentation

The following documents are available in the Peregrine library:

- *ServiceCenter Client/Server Installation Guide for OS/390 MVS*

  Provides instructions for installing the ServiceCenter OS/390 client and server. Includes instructions for configuring the client/server, including optional mail and interface functions.

- *ServiceCenter Client/Server Installation Guide for UNIX*

  Provides instructions for installing the ServiceCenter 5.1 client and server on a Unix platform. Includes instructions for configuring the client/server, including optional mail and interface functions.

- *ServiceCenter Client/Server Installation Guide for Windows*

  Provides instructions for installing the ServiceCenter 5.1 client and server on a Windows platform. Includes instructions for configuring the client/server, including optional mail and interface functions.

- *ServiceCenter Database Management and Administration Guide*

  Provides information about implementing ServiceCenter databases: hosting ServiceCenter data; converting ServiceCenter data from its internal format to a storage location on a commercial RDBMS; and maintaining the ServiceCenter file system. Provides information about retrieving, editing, and maintaining database records.

- *ServiceCenter System Administrator's Guide*

  Provide instructions for configuring and managing the ServiceCenter system using basic ServiceCenter administrative tools and support files.

- *ServiceCenter System Tailoring*

  Describes customizing the ServiceCenter system, which requires knowledge of programming.

- *ServiceCenter Technical Reference*

  Provides information about installing and configuring ServiceCenter. Includes the command line and initialization file parameters that are recognized by the system

- *Connect-It Users Guide*

  Provides information about Connect-It scenarios and underlying concepts.

A complete listing of the current Peregrine Systems documentation is available on the documentation page of the Peregrine CenterPoint Web site:

http://support.peregrine.com/

Note: A user name and password are required for access to this site.

You can download PDF files and view them using the Adobe Acrobat Reader, which is available on the Customer Support Web site and through Adobe at:

http://www.adobe.com.

Additionally, you can order printed copies of the documentation through your Peregrine Systems sales representative.

Education services

Peregrine Systems offers classroom training for all Peregrine products, on site anywhere in the world and via the Internet.

Information about Peregrine Systems training services is available at:

http://www.peregrine.com/education

Contacting Peregrine Systems

You can contact Peregrine Systems at:

http://support.peregrine.com/

Address:	Peregrine Systems, Inc. Attn.: Education Services 3611 Valley Centre Drive San Diego, CA 92130
Telephone:	+1 (858) 794-5009
Fax:	+1 (858) 480-3928

Tivoli Enterprise Data Warehouse documentation

The following documents are available in the Tivoli Enterprise Data Warehouse library, both on the documentation CD and online at:

http://publib.boulder.ibm.com/tividd/td/tdprodlist.html

Also, see the section *IBM DB2, DB2 Data Warehouse Center, and DB2 Warehouse Manager Documentation* on page 14.

- *Tivoli Enterprise Data Warehouse Release Notes, GI11-0857*

  Provides late-breaking information about Tivoli Enterprise Data Warehouse, and lists hardware requirements and software prerequisites.
- *Installing and Configuring Tivoli Enterprise Data Warehouse, GC32-0744*

  Describes how Tivoli Enterprise Data Warehouse fits into your enterprise, explains how to plan for its deployment, and gives installation and configuration instructions. It contains maintenance procedures and troubleshooting information.

Note: Be sure to get the most recent copy for up-to-date information.

- *Enabling an Application for Tivoli Enterprise Data Warehouse, GC32-0745*

  Provides information about connecting an application to the warehouse pack. This book is for:

  - Application programmers who use the warehouse pack to store and report on their application data
  - Data warehousing experts who import warehouse pack data into Business Intelligence applications
  - Customers who store their local data in the warehouse pack.

Related publications

The following publications provide information about the warehouse pack:

- *Tivoli Software Glossary*

  Includes definitions for many of the technical terms related to Tivoli software. The Tivoli Software Glossary is available, in English only, at the following Web site:

  http://publib.boulder.ibm.com/tividd/glossary/termsmst04.htm

IBM Redbooks

IBM Redbooks are developed and published by the IBM International Technical Support Organization (ITSO). They explore integration, implementation, and operation in realistic customer scenarios.

The following Redbooks contain information about Tivoli Data Warehouse:

- *Introduction to Tivoli Enterprise Data Warehouse*, SG24-6607

  Provides a broad understanding of Tivoli Data Warehouse. Some of the topics that are covered are: concepts, architecture, writing your own ETLs, and best practices in creating data marts.

- *Planning a Tivoli Enterprise Data Warehouse Project, SG24-6608*

  Describes the steps you take to plan a warehouse pack deployment. Shows how to apply planning steps in a real-life, warehouse pack implementation using IBM Tivoli Monitoring. Contains frequently used Tivoli and DB2 commands, and lists troubleshooting tips for Tivoli Data Warehouse.

Accessing publications online

The documentation and product CDs contain the product library. The publications are available in PDF format, HTML format, or both.

IBM posts publications for all Tivoli products on the Tivoli Software Information Center Web site:

http://publib.boulder.ibm.com/tividd/td/tdprodlist.html

Click the Tivoli Enterprise Data Warehouse link to access the warehouse pack product library.

Note: To print PDF documents on paper that is not letter-sized, select the Fit to page check box in the Adobe Acrobat Print dialog. This option is available when you click File Print. Fit to page ensures that the full dimensions of a letter-sized page print on the paper that you are using.

Ordering publications

You can order many Tivoli publications online at:

http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968
- In other countries, for a list of telephone numbers, see the following Web site:

  http://www.ibm.com/software/tivoli/order-lit/

Accessibility

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use software products successfully. For the warehouse pack, you use the interfaces of IBM DB2 and the reporting tool. See the documentation sets for those products for information about accessibility.

Contacting software support

If you have a problem with a Tivoli product, refer to the following IBM Software Support Web site:

http://www.ibm.com/software/sysmgmt/products/support/

If you want to contact customer support, see the IBM Software Support Guide at the following Web site:

http://techsupport.services.ibm.com/guides/handbook.html

The guide provides information about how to contact IBM Software Support, depending on the severity of your problem, and includes:

- Registration and eligibility information
- Telephone numbers and e-mail addresses, depending on the country in which you are located
- Information you have ready before contacting IBM Software Support

IBM DB2, DB2 Data Warehouse Center, and DB2 Warehouse Manager Documentation

The DB2 library contains important information about the database and data warehousing technology provided by IBM DB2, DB2 Data Warehouse Center, and DB2 Warehouse Manager. Refer to the DB2 library for help in installing, configuring, administering, and troubleshooting DB2. The DB2 library is available online at:

http://www-3.ibm.com/software/data/db2/library/

After you install DB2, its library is also available on your system.

The following DB2 documents are particularly relevant for people working with Tivoli Enterprise Data Warehouse:

- *IBM DB2 Universal Database for Windows Quick Beginnings, GC09-2971*

  Guides you through the planning, installation, migration (if necessary), and setup of a partitioned database system using the IBM DB2 product on Microsoft Windows.
- *IBM DB2 Universal Database for UNIX Quick Beginnings, GC09-2970*

  Guides you through the planning, installation, migration (if necessary), and setup of a partitioned database system using the IBM DB2 product on UNIX.
- *IBM DB2 Universal Database Administration Guide: Implementation, SC09-2944*

Covers the details of implementing your database design. Topics include creating and altering a database, database security, database recovery, and administration using the DB2 Control Center, which is a DB2 graphical user interface.

- *IBM DB2 Universal Database Data Warehouse Center Administration Guide, SC26-9993*

  Provides information about using the DB2 Data Warehouse Center to build and maintain a data warehouse.

- *IBM DB2 Warehouse Manager Installation Guide, GC26-9998*

  Provides information about installing the following Warehouse Manager components: Information Catalog Manager, warehouse agents, and warehouse transformers.

- *IBM DB2 Universal Database and DB2 Connect Installation and Configuration Supplement, GC09-2957*

  Addresses advanced installation issues, and guides you through the planning, installation, migration (if necessary), and set up of a platform-specific DB2 client. Contains information about binding, setting up communications on the server, DB2 GUI tools, DRDA® AS, distributed installation, configuration of distributed requests, and accessing heterogeneous data sources.

- *IBM DB2 Universal Database Message Reference Volume 1, GC09-2978* and *IBM DB2 Universal Database Message Reference Volume 2, GC09-2979*

  Lists the messages and codes issued by DB2, the Information Catalog Manager, and the DB2 Data Warehouse Center; and describes the actions you should take.

1 Overview

CHAPTER

Tivoli Enterprise Data Warehouse consists of a centralized data store where historical data from many management applications can be stored, aggregated, and correlated.

This chapter provides an overview of Tivoli Enterprise Data Warehouse, the warehouse pack, and mapping information.

Topics in this chapter include:

Overview of Tivoli Enterprise Data Warehouse

Tivoli Enterprise Data Warehouse provides the infrastructure for the following:

- Using extract, transform, and load (ETL) processes through the DB2 Data Warehouse Center tool
- Generating a schema of the central data warehouse
- Reporting historical data

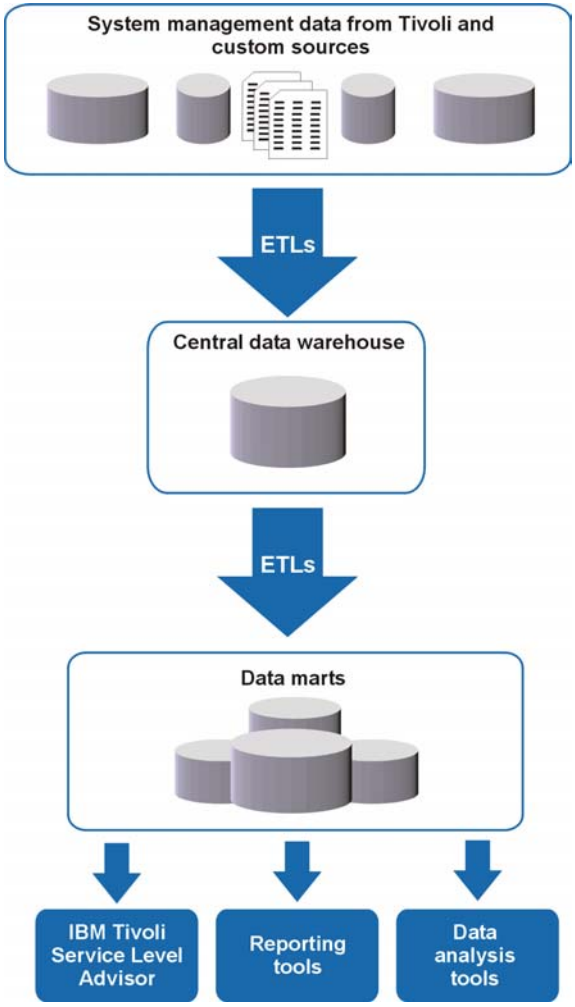


Figure 1-1: Tivoli Enterprise Data Warehouse basic architecture

Terminology

The table below defines some common Tivoli Enterprise Data Warehouse terms. This guide also uses some terminology defined in the ITIL standard. See *Best Practice for Service Support* for definitions of ITIL standard terms.

Table 1: Tivoli Enterprise Data Warehouse terminology

Term	Definition
Attributes	Describe components and are generally used to help filter the components.
ETL	A DB2 Data Warehouse Center tool used to extract, transform, and load (ETL) data into DB2 from other databases.
Warehouse pack	A separately installable part of a software product that provides TEDW functionary by providing Extract, Transform, and Load ETL programs to populate the central data warehouse.
PCHILD	A naming relationship between components. A PCHILD (parent/child) relationship between the SERVICE_DESK and the INCIDENT components means that, within the context of an installation of SERVICE_DESK, all the INCIDENT components have a unique name. For example, incident number 287 on service desk server 1 would be different from incident number 287 on service desk server 2.
Central data warehouse	Uses a single generic schema for all applications. When you add new components or applications to the warehouse, the Tivoli Enterprise Data Warehouse adds more data to the database, but not new tables or columns to the schema.
Data mart	A subset of a data warehouse that contains data that are tailored and optimized for the specific reporting needs of a department or team.
Central data warehouse ETL	Reads data from the operational data stores of the application that collects it; verifies the data; makes the data conform to the schema; and places the data into the central data warehouse.
Data mart ETL	Extracts a subset of data from the central data warehouse; transforms it; and loads it into one or more star schemas, which can be included in data marts to answer specific business questions.

Overview of the warehouse pack

This warehouse pack is used with Tivoli Enterprise Data Warehouse version 1.1 and with ServiceCenter version 5.1. You can use it to transfer data from ServiceCenter to DB2. The installation includes several Connect-It scenarios and ETL processes.

Connect-It scenarios

The Connect-It scenarios included in this warehouse pack convert ServiceCenter data into the XML format required by the ETL processes.

Though the technology used by a service desk can change over time, the ETLs will continue to function correctly as long as the mapping to the XML file remains correct. (All elements marked as mandatory in the DTD are included in the data exported to the XML file.)

The ETL converts only the data that is in the XML file. If you do not want certain data flowing into the Tivoli Enterprise Data Warehouse, do not include it in the data exported to the XML file.

Scenarios installed by the warehouse pack include:

- SC5Xprobsummary.to.Tivoli Enterprise Data Warehouse.scn
  This scenario processes ServiceCenter Incident records.
- SC5Xincidents.to.Tivoli Enterprise Data Warehouse.scn
  This scenario processes ServiceCenter Call records.
- SC5Xcm3r.to.Tivoli Enterprise Data Warehouse.scn
  This scenario processes ServiceCenter Change records.

ETL processes

The following ETL processes are included in the warehouse pack:

- *PE2_c05_Load_Service_Desk_Data_Process*

  Run this process to load new data into the central data warehouse.

  The process loads the XML staging tables, using the XML data files exported from the Peregrine databases; transforms them into a format that is compatible with the central data warehouse; and loads the data.

  For more information see *PE2_c05_Load_Service_Desk_Data_Process* on page 21.

- *PE2_c10_Purge_Comps_And_Attrs*

  Run this process after you load new data into the central data warehouse.

  The process drops the XML staging tables that were used by *PE2_c05_Load_Service_Desk_Data_Process*.

  For more information see *PE2_c10_Purge_Comps_And_Attrs* on page 21.

  Note: For testing purposes, run *PE2_c10_Purge_Comps_And_Attrs* using the sample files. After testing is complete, run *PE2_c10_Purge_Comps_And_Attrs* on production data files.

Tip: Schedule ETLs to run periodically, ideally during non-peak hours.

PE2_c05_Load_Service_Desk_Data_Process

Steps included in the process:

1. PE2_c05_s010_Load_Into_Staging: loads the ServiceCenter application-component XML staging tables using XML data files exported from the Peregrine databases.
2. PE2_c05_s020_Comp: takes the ServiceCenter application-component XML staging tables as input; transforms the component data; and loads the data into the central data warehouse.
3. PE2_c05_s030_Msmt: takes the ServiceCenter application-component XML staging tables as input; transforms the measurement data; and loads the data into the central data warehouse.

PE2_c10_Purge_Comps_And_Attrs

Step included in the process:

- PE2_c10_s010_Purge_Comps: drops and re-creates all ServiceCenter application-component XML staging tables that are used in the ETL processing.

Component Relationships

Figure 1-2 on page 22 shows the major service desk components and the warehouse relationships between those components. The arrows are usually optional. For example, not all Change requests cause Incidents, but Incidents often drive Change requests. Therefore, the relationship between incidents and Change request is bi-directional. If there is a relationship between the change and the incident, it is the Causes relationship. In addition, the arrows also allow one-to-many mapping. For example, numerous incidents may have a relationship with a single change request.

Note: Incident and Change Request components save attribute data about configuration attributes, but the ETL does not create a configuration asset object, nor relationships between that object and the corresponding Incident or Change Request.

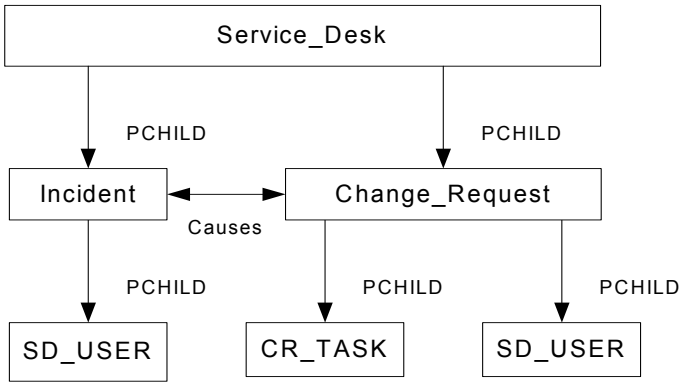


Figure 1-2: Component Types and Relationships

Component Structure

The component structure uses PCHILD relationships, which are discussed in the section *Terminology* on page 19.

The component structure uses these models:

- SERVICE_DESK -> INCIDENT -> SD_USER
- SERVICE_DESK -> CHANGE_REQUEST -> SD_USER
- SERVICE_DESK -> CHANGE_REQUEST -> CR_TASK

Components used in the structure include:

- *SERVICE_DESK* — This high-level component represents the installation of ServiceCenter itself.

  If an installation contains multiple copies of ServiceCenter, the warehouse pack creates multiple components for each machine running a ServiceCenter server. Each ServiceCenter server requires its own scenarios, which point to its host name and port number. This structure ensures that Incident and Change numbers do not conflict where multiple ServiceCenter installations exist.

When an aggregation such as the number of open incidents are reported against the SERVICE_DESK component, the aggregation represents all incidents opened during a time interval, and only for that instance of the SERVICE_DESK server session.

- *CHANGE_REQUEST*, and *INCIDENT* — The modeling is basically the same for the both components. The component name is a unique change or incident number. Almost everything else (such as severity, system, open time, contact, status, abstract, and description) is an attribute. Attributes describe components and are generally used to help filter the components.
- *SD_USER* — There can be multiple users, such as the requester, the contact, or the approver of a change. This component contains information about each user, such as e-mail address and phone number, that is not specific to the incident or change.

Mapping ServiceCenter data

The following sections describe how ServiceCenter data are mapped to the data warehouse.

Data flow

The following diagram depicts the data flow from the ServiceCenter database to the central data warehouse.

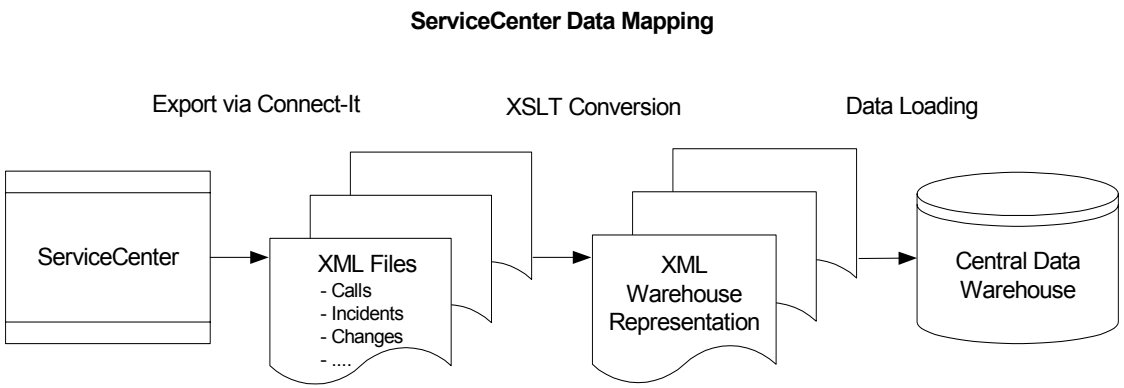


Figure 1-3: ServiceCenter data Mapping

Data mapping tables

The following tables show the complete mapping of the Service Center data to the central data warehouse (CDW).

Important: The XML and central data warehouse mappings contain extra fields that are not included in ServiceCenter as shipped. These additional fields are for any extra fields in your ServiceCenter installation.

In the mapping tables below, three columns show how the data maps to the central data warehouse tables.

- The *CDW column name* represents the column name in the CDW tables.
- The *A C M* identifies the field as an Attribute, a Component, or a Measurement in the CDW.
- The *CDW type* specifies the name of the specific Attribute Type, Component Type, or Measurement Type used in the CDW.

  If the *CDW type* is an Attribute Type, then it is important to know what component in the CDW is associated with that attribute. The convention used in this table is to use the prefix `IN-` if the attribute is associated with the INCIDENT component, `CR-` if the attribute is associated with the CHANGE_REQUEST component, `TK-` if the attribute is associated with the CR_TASK component, and `SD_USER-` if the attribute is associated with the SD_USER component. A much more detailed example of how the data is saved in the warehouse is shown in the Component Configuration tables section.

Note: You use a hostname and port number to identify each ServiceCenter instance.

Incident data

Source Application Table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	A C M	CDW column name
CI Mapping	"Unknown	"hostname	SERVICE_ DESK	C	Comp_Nm
CI Mapping	"12670	"port	*	*	*
		Incident	INCIDENT	A	CompAttr_Val
		assignee	IN-ASSIGNEE_NAME	A	CompAttr_Val
incidents	assignment,1	assignmentGroup	IN-SD_ ASSIGN_GROUP	A	CompAttr_Val
		fixTime	IN-FIX_TIME	A	CompAttr_Val
incidents	close.time	closeTime	IN-CLOSE_TIMESTAMP	A	CompAttr_Val
incidents	cause.code	abstract	IN-ABSTRACT	A	CompAttr_Val
incidents	description	description	IN-DESCRIPTION	A	CompAttr_Val
	incident.id	Id -	INCIDENT	C	Comp_Nm
CI Mapping	"Service	"type	IN-TYPE	A	CompAttr_Val
incidents	open.time	openTime	IN-OPEN_TIMESTAMP	A	CompAttr_Val
incidents	resolution	resolution -> description	Not Modeled		
incidents	resolution.code	resolution -> code	Not Modeled		
incidents	category	category	IN-SD_SYSTEM	A	CompAttr_Val
incidents	cause.code	causeCode	IN-SD_CAUSE_CODE	A	CompAttr_Val
incidents	owner.name	owner	IN-OWNER	A	CompAttr_Val
incidents	priority.code	priority	IN-PRIORITY	A	CompAttr_Val
incidents	problem.type	problemType	IN-SD_PROBLEM_TYPE	A	CompAttr_Val

Source Application Table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	A C M	CDW column name
incidents	product.type	productType	IN-SD_PRODUCT_TYPE	A	CompAttr_Val
		closedByID	IN-CLOSED_BY	A	CompAttr_Val
		impact	IN-IMPACT	A	CompAttr_Val
		firstCall Resolution	IN-FIRST_CALL_RES	A	CompAttr_Val
		dueDate	IN-DUE_DATE		CompAttr_Val
		item	IN-SD_ITEM	A	CompAttr_Val
		module	IN-SD_MODULE	A	CompAttr_Val
		severity	IN-SEVERITY	A	CompAttr_Val
		site	IN-SITE	A	CompAttr_Val
incidents	site.category	siteCategory	IN-SD_SITE_CATEGORY	A	CompAttr_Val
incidents	open	status	IN-SD_STATUS_CODE	A	CompAttr_Val
incidents	subcategory	subcategory	IN-SD_COMPONENT	A	CompAttr_Val
incidents	affected.item	affectedAsset -> id	IN-SD_ASSETS_AFFECTD	A multi-valued	CompAttr_Val
		affectedAsset -> name	Not Modeled		
		affectedAsset -> IPAddress	Not Modeled		
		affectedAsset -> fullyQualifiedHostname	Not Modeled		
		affectedAsset -> relationship	Not Modeled		
incidents	company	contact -> company	IN-COMPANY	A	CompAttr_Val
incidents	company	contact -> company	SD_USER-COMPANY	A	CompAttr_Val

Source Application Table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	A C M	CDW column name
incidents	dept	contact -> department	IN-DEPARTMENT	A	CompAttr_Val
incidents	dept	contact -> department	SD_USER-DEPARTMENT	A	CompAttr_Val
incidents	contact.email	contact -> email	SD_USER-E_MAIL_ADDRESS	A	CompAttr_Val
incidents	contact.name	contact -> id	SD_USER	C	Comp_Nm
incidents	contact.name	contact -> id	IN-CONTACT	A	CompAttr_Val
incidents	contact.first	contact -> firstName	SD_USER-FIRST_NAME	A	CompAttr_Val
incidents	contact.last	contact -> lastName	SD_USER-LAST_NAME	A	CompAttr_Val
		contact -> userID	SD_USER-SD_USERID	A	CompAttr_Val
		contact -> cellPhone	SD_USER-CELL_ PHONE_NUMBER	A	CompAttr_Val
		contact -> division	SD_USER-DIVISION	A	CompAttr_Val
		contact -> division	IN- DIVISION	A	CompAttr_Val
incidents	phone	contact -> officePhone	SD_USER-PHONE_NUMBER	A	CompAttr_Val
		site	SD_USER-SITE	A	CompAttr_Val
		siteCategory	SD_USER-SD_ SITE_CATEGORY	A	CompAttr_Val
incidents	company	reportedBy -> company	Not Modeled		
incidents	alternate.contact	reportedBy -> id	IN-SD_REPORTD_BY_NM	A	CompAttr_Val
incidents	alternate.phone	reportedBy -> officePhone	Not Modeled		
		reportedBy -> division	Not Modeled		
		reportedBy -> firstName	Not Modeled		

Source Application Table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	A C M	CDW column name
		reportedBy -> lastName	Not Modeled		
		reportedBy -> userID	Not Modeled		
		reportedBy -> employeeNumber	Not Modeled		
		reportedBy -> department	Not Modeled		
		reportedBy -> email	Not Modeled		
		reportedBy -> cellPhone	Not Modeled		
incidents	scrclation -> source	relatedChange -> id	IN-SD_RELATED_CHNGS	A multi-valued	CompAttr_Val
		relatedChange -> relationshipType	Not Modeled		
		relatedincidents -> relationshipType	Not Modeled		
		relatedAsset -> id	Not Modeled		
		relatedAsset -> name	Not Modeled		
		relatedAsset -> IPAddress	Not Modeled		
		relatedAsset -> fullyQualifiedHostname	Not Modeled		
		relatedAsset -> relationship	Not Modeled		
incidents	clocks.name	state -> code	INCIDENT	M	MsmtTyp_Nm
incidents	clocks.total	state -> duration	INCIDENT	M	Msmt_tot_val

Source Application Table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	A C M	CDW column name
		state -> startTime	<msmt calculation>	M	
		state -> endTime	<msmt calculation>		
incidents	clocks.events.start	state -> details -> startTime	INCIDENT	M	Msmt_Strt_Dt Msmt_Strt_Tm
incidents	clocks.events.stop	state -> details -> endTime	INCIDENT	M	
		contact -> employeeNumber	SD_USER-EMPLOYEE_NUMBER	A	CompAttr_Val
		reportedBy -> company	Not Modeled		
		updateActivity -> type	Not Modeled		

The following are supporting ServiceCenter tables:

- screlation table - can be either:
  - A join from the incidents file based upon incident.id to the depend field in the screlation file. For related changes, it queries against records with the source file name of cm3r; for related incidents, it queries against records with the source file name of problem.
  - A join from the probsummary file based upon number to the depend field in the screlation file. For related changes, it queries against records with the source file name of cm3r; for related calls, it queries against records with the source file name of incidents.
- clocks table - can be either:
  - A join from the incidents file based upon incident.id to the key.char field in the clocks file.
  - A join from the probsummary file based upon number to the key.char field in the clocks file.

  For information on ServiceCenter clocks, see *ServiceCenter System Tailoring*.

- activity table - A join of the number field in the probsummary file to the number field in the activity file.

Change Management data

Source Application Table	Field Names	Corresponding Names in DTD file	CDW TypeCHAR (17)	M C A	CDW column name
CI Mapping connector	hostname	unknown	SERVICE_DESK	C	Comp_Nm
CI Mapping connector	port	12670	*	*	*
cm3r	brief.description	abstract	CR-ABSTRACT	A	CompAttr_Val
cm3r	approval.status	approvalStatus	CR-CR_APP_STATUS	A	CompAttr_Val
cm3r	close.time	completeDate	CR_COMPLETE_DATE	A	CompAttr_Val
cm3r	description	description	CR-DESCRIPTION	A	CompAttr_Val
cm3r		openTime	CR-OPEN_TIMESTAMP	A	CompAttr_Val
cm3r	number	Id	CHANGE_REQUEST	C	Comp_Nm
cm3r	request.date	requestDate	CR_REQUEST_DATE	A	CompAttr_Val
cm3r	status	Status	CR_STATUS_CODE	A	CompAttr_Val
cm3r	assigned.to	assignee	CR-ASSIGNEE_NAME	A	CompAttr_Val
cm3r	backout.method	backoutPlan	CR-CR_BACKOUT_PLAN	A	CompAttr_Val
cm3r	completion.code	completionCode	CR-CR_COMPLETION_CD	A	CompAttr_Val
cm3r	priority	priority	CR-CR_PRIORITY	A	CompAttr_Val
cm3r	risk.assessment	riskLevel	CR-SD_RISK_LEVEL	A	CompAttr_Val
cm3r	subcategory	subsystem	CR-SD_COMPONENT	A	CompAttr_Val
cm3r		item	CR-SD_ITEM	A	CompAttr_Val

Source Application Table	Field Names	Corresponding Names in DTD file	CDW TypeCHAR (17)	M C A	CDW column name
cm3r		module	CR-SD_MODULE	A	CompAttr_Val
cm3r	category	system	CR-SD_SYSTEM	A	CompAttr_Val
cm3r	down.start	actualDate -> start	CR-CR_ACT_START	A	CompAttr_Val
cm3r	down.end	actualDate -> end	CR-CR_ACT_END	A	CompAttr_Val
cm3r	outage.end	actualOutage -> end	CR-CR_ACT_OUTAGE_ED	A	CompAttr_Val
cm3r	outage.start	actualOutage -> start	CR-ACT_OUTAGE_ST	A	CompAttr_Val
cm3r	coord.dept	coordinator -> department	Not Modeled		
cm3r	coordinator	coordinator -> id	Not Modeled		
cm3r	coord.phone	coordinator -> officePhone	Not Modeled		
		coordinator -> firstName	Not Modeled		
		coordinator -> lastName	Not Modeled		
		coordinator -> userID	Not Modeled		
		coordinator -> employeeNumber	Not Modeled		
		coordinator -> division	Not Modeled		
		coordinator -> cellPhone	Not Modeled		
		coordinator -> email	Not Modeled		
		coordinator -> company	Not Modeled		

Source Application Table	Field Names	Corresponding Names in DTD file	CDW TypeCHAR (17)	M C A	CDW column name
cm3r	planned.start	plannedDate -> start	CR-CR_PLAN_START	A	CompAttr_Val
cm3r	planned.end	plannedDate -> end	CR-CR_PLAN_END	A	CompAttr_Val
cm3r	sched.outage.start	plannedOutage -> start	CR-CR_PLAN_OUTAGE_ST	A	CompAttr_Val
cm3r	sched.outage.end	plannedOutage -> end	CR-CR_PLAN_OUTAGE_ED	A	CompAttr_Val
cm3r	logical.name	relatedAssets -> id	CR-SD_ASSETS_AFFECTD	A	CompAttr_Val
		N/A - calculated	CR_START_DELAY	A	CompAttr_Val
		N/A - calculated	CR_END_DELAY	A	CompAttr_Val
		relatedAsset -> name	Not Modeled		
		relatedAsset -> IPAddress	Not Modeled		
		relatedAsset -> fullyQualifiedHostname	Not Modeled		
		relatedAsset -> relationship	Not Modeled		
cm3r	company	requester -> company	SD_USER-COMPANY	A	CompAttr_Val
cm3r	company	requester -> company	CR-COMPANY	A	CompAttr_Val
cm3r	request.dept	requester -> department	SD_USER-DEPARTMENT	A	CompAttr_Val
cm3r	request.dept	requester -> department	CR-DEPARTMENT	A	CompAttr_Val
cm3r	requested.by	requester -> id	SD_USER	C	Comp_Nm
cm3r	requested.by	requester -> id	CR-CONTACT	A	CompAttr_Val
cm3r	contact.first.name	requester -> firstName	SD_USER-FIRST_NAME	A	CompAttr_Val
cm3r	contact.last.name	requester -> lastName	SD_USER-LAST_NAME	A	CompAttr_Val

Source Application Table	Field Names	Corresponding Names in DTD file	CDW TypeCHAR (17)	M C A	CDW column name
cm3r	request.phone	requester -> officePhone	SD_USER-PHONE_NUMBER	A	CompAttr_Val
		requester -> userID	SD_USER-SD_USERID	A	CompAttr_Val
		requester -> employeeNumber	SD_USER-EMPLOYEE_NUMBER	A	CompAttr_Val
		requester -> division	SD_USER-DIVISION	A	CompAttr_Val
		requester -> email	SD_USER-E_MAIL_ADDRESS	A	CompAttr_Val
		requester -> cellPhone	SD_USER-CELL_PHONE _NUMBER	A	CompAttr_Val
		requester -> division	CR-DIVISION	A	CompAttr_Val
	ApprovalLog -> action	authorization -> action	CR_APP_ACTION	A multi-valued	CompAttr_Val
	ApprovalLog -> category	authorization -> type	Not modeled		
	ApprovalLog -> date	authorization -> timestamp	CR-APPROVAL_TIMESTAMP	A multi-valued	CompAttr_Val
	ApprovalLog -> operator	authorization -> approver	CR-APPROVER_NAME	A multi-valued	CompAttr_Val
screlation	screlation -> source	relatedIncident -> id	CR-SD_RELATED_INCS	A	CompAttr_Val
clocks	name	state -> code	CHANGE_REQUEST	M	MsmtTyp_Nm
clocks	total	state -> duration	CHANGE_REQUEST	M	Msmt_tot_val
		state -> startTime	<msmt calculation>		
		state -> endTime	<msmt calculation>		

Source Application Table	Field Names	Corresponding Names in DTD file	CDW TypeCHAR (17)	M C A	CDW column name
clocks	events -> start	state -> details -> startTime	CHANGE_REQUEST	M	Msmt_Strt_Dt Msmt_Strt_Tm
clocks	events -> stop	state -> details -> endTime	CHANGE-REQUEST	M	

Supporting ServiceCenter tables:

- ApprovalLog table - A join of the numberin the cm3r file to the unique.key field in the ApprovavlLog file, where approval records have a file.name value of cm3r.
- screlation table - A join of number in the cm3r file to the depend field in the screlation file. For related changes, it queries records with the source file name of cm3r; for related calls, it queries against records with the source file name of incidents.
- clocks table - A join of number in the cm3r file to the key.char field in the clocks file.

Change Management tasks

Tasks are defined in the DTD, and modeled in the CDW as components under Change requests. Tasks are not included in the exported data.

Source Application table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	M C A	CDW column name
		task -> id	CR_TASK	C	Comp_Nm
		task-related ChangeRequest -> id	Relationship back to parent change		
		task -> phase	TK-CR_TASK_PHASE	A	CompAttr_Val
		task -> status	TK-CR_TASK_STATUS	A	CompAttr_Val
		task -> startTime	TK-CR_PLAN_START	A	CompAttr_Val
		task -> endTime	TK-CR_PLAN_END	A	CompAttr_Val

Source Application table	Field Names	Corresponding Names in dtd file	CDW Type CHAR (17)	M C A	CDW column name
		ServiceDeskTasks -> relationshipType	Not modeled		
		task -> description	TK-CR_TASK_DESC	A	CompAttr_Val

2 Installation and Setup

CHAPTER

This chapter provides information on how to install and configure the warehouse pack, including prerequisite software installations, and information on database sizing.

Topics in this chapter include:

Prerequisite software

The warehouse pack requires that several external software packages be installed in order to run. Be sure that these software packages are set up and running properly before beginning the installation:

- IBM DB2 Universal Database Enterprise Edition, Version 7.2, fix pack 6 or greater

  For information on installing IBM DB2 Universal Database, see the IBM DB2 documentation.
- Tivoli Enterprise Data Warehouse, Version 1.1

  For information on installing Tivoli Enterprise Data Warehouse, see *Installing and Configuring Tivoli Enterprise Data Warehouse*.
- Tivoli Enterprise Data Warehouse, Version 1.1, fix pack 2 or greater (1.1-TDW-FP02)
- IBM DB2 Universal Database XML Extender, Version 7.1, fix pack 9 or greater
- ServiceCenter version 5.1 or greater

  For information on installing ServiceCenter, see the *ServiceCenter Client/Server Installation Guide* for your platform.
- Connect-It version 3.2.1.3319 or greater

  For information on installing Connect-It, see the *Connect-It Installation Guide*.

Product notes and limitations

This warehouse pack currently does not allow spaces in paths and filenames due to the lack of XSLT support for this. To get around this, set the environment values on your server to have no spaces in the filenames.

Database sizing considerations

Ensure that you have sufficient space in the CDW database to store the historical data that you intend to collect with this warehouse pack. To estimate how much space is required for the warehouse pack, complete the *Daily Central Data Warehouse estimate worksheet* on page 39.

The following values are assumed in this sample worksheet. Adjust these numbers to match the normal daily behavior in your environment:

- The average length for a row in the component table is 150 bytes. This varies depending on the actual lengths of some of the strings for the Incident abstracts.
- The Tivoli Enterprise Data Warehouse requires 176 bytes for measurements.
- The component attribute table requires 90 bytes.
- The following transaction volumes: 100 incidents per day, 50 Change Requests per day, and 5 tasks per change request.

Daily Central Data Warehouse estimate worksheet

Object managed	Count	Space Formula In Bytes
Number of Incident measurements per service desk	2	35200
Number of Change Request measurements per service desk	10	88000
Number of Incidents per day	100	15000
Number of attributes per Incident	29	522000
Number of Incident Measurements	5	88000
Number of User Incident Measurements	2	35200
Number of Incident User Attributes	15	270000
Number of Incident User Components	100	15000
Average Number of attribute changes	2	
Number of Change Request per day	50	7500
Number of attributes per Change Request	34	306000
Number of Change Request Measurements	18	158400
Number of User Change Request Measurements	9	79200
Number of Change Request User Attributes	15	135000
Number of Tasks per Change Request	5	37500
Number of Attributes per Task	5	45000
Number of Change Request User Components	50	7500

Object managed	Count	Space Formula In Bytes
Daily Total (bytes)		776100
Monthly Total (bytes)		23283000
Yearly Total (bytes)		279396000

Warehouse pack installation

These major steps are required to complete the warehouse pack installation:

Step 1 *Installing the warehouse pack* on page 41

Step 2 *Installing the Connect-It scenario* on page 42

Step 3 *Configuring the warehouse pack* on page 43

Step 4 *Configuring the Connect-It scenario* on page 49

Files used and produced by the warehouse pack

The following table lists different types of ServiceCenter data, and the files that are used to transform that type of data.

ServiceCenter Application	ServiceCenter Table	Tivoli Enterprise Data Warehouse XML File	Connect-It Scenario	DTD File
Service Management	incidents	incidents.xml	SC5Xincidents.to.Tivoli Enterprise Data Warehouse.scn	Incidents.dtd
Incident Management	probsummary	probsummary.xml	SC5Xprobsummary.to. Tivoli Enterprise Data Warehouse.scn	Incidents.dtd
Change Management	cm3r	cm3rs.xml	SC5Xcm3r.to.Tivoli Enterprise Data Warehouse.scn	Change.dtd

Installing the warehouse pack

This installation requires access to information on the Tivoli Enterprise Data Warehouse installation CD and the warehouse pack installation CD. Unless you have 2 CD-ROM drives, we recommend that you copy the warehouse pack CD to your hard drive or a network drive so that the installer can access both at the same time.

Perform the installation on your Tivoli Enterprise Data Warehouse control server.

To install the warehouse pack:

1. Ensure that your setup matches the software requirements described in *Prerequisite software* on page 38.
2. Set the environment values for your server. For more information, see *Product notes and limitations* on page 38.

   On Windows 2000 servers:

   a. Right-click **My computer** on your desktop, and select **Properties** from the menu.

   b. Select the **Advanced** tab and click **Environment Values**.

   c. Edit the following **System Variables** to remove all spaces from the file names.

      - Path
      - TWH_TOPDIR

      For example, change any occurrence of `Program Files` to `progra~1`.
3. Start the Tivoli Enterprise Data Warehouse installation program and follow the instructions given by the installer. The installation program is located on the Tivoli Enterprise Data Warehouse product CD.

   a. When prompted to choose a setup type, select **Application installation only**.

   b. When prompted to enter the path to the installation media, enter the path to the warehouse pack ETL applications. They are located on the warehouse pack installation CD under: `D:\ETLapps\tedw_apps_etl`.

   c. Complete the installation, following the instructions given by the installer.

   For more information, see *Installing and Configuring Tivoli Enterprise Data Warehouse.*

4 Manually stop and restart the following services for Tivoli Presentation Services:

- Server for IBM Console
- Web Services for the IBM Console

For more information, see *Installing and Configuring Tivoli Enterprise Data Warehouse.*

Installing the Connect-It scenario

Connect-It Scenarios process ServiceCenter records and convert them into the XML format required for Tivoli Enterprise Data Warehouse transformation.

To install the Connect-It scenarios:

1 Ensure that your setup matches the software requirements described in *Prerequisite software* on page 38.

2 Create a new directory (**SCtoTEDW** in this example) under the main **ConnectIt\scenario** directory.

For example, if your current Connect-It installation resides in:
C:\Program Files\Peregrine\ConnectIt\scenario

Create
C:\Program Files\Peregrine\ConnectIt\scenario\SCtoTEDW.

3 Copy the following scenarios and the DTD from the installation location to the new directory, and remove the Read-only property in each:

- **SC5Xcm3r.to.Tivoli Enterprise Data Warehouse.scn**
- **SC5Xprobsummary.to.Tivoli Enterprise Data Warehouse.scn**
- **SC5Xincidents.to.Tivoli Enterprise Data Warehouse.scn**
- **incidents.dtd**
- **change.dtd**

These files are on the install CD in **D:\Peregrine\ConnectIt\Scenarios**.

4 Copy the date.usr file from the install location into the new directory, and remove its Read-only property. This file resides on the install CD in D:\Peregrine\ConnectIt\date.usr.

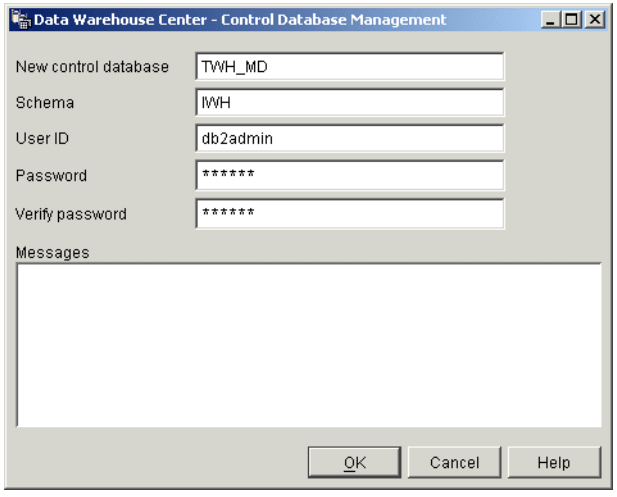
5 Copy the file scdb51TEDW.cfg from the install CD to C:\Program Files\Peregrine\ConnectIt\config\sc\scdb51TEDW.cfg, and remove its Read-only property. This file resides on the install CD in D:\Peregrine\ConnectIt\.

Configuring the warehouse pack

After you install the warehouse pack, use the DB2 Data Warehouse Center to configure its data sources and targets. Complete information is found in *Installing and Configuring Tivoli Enterprise Data Warehouse*.

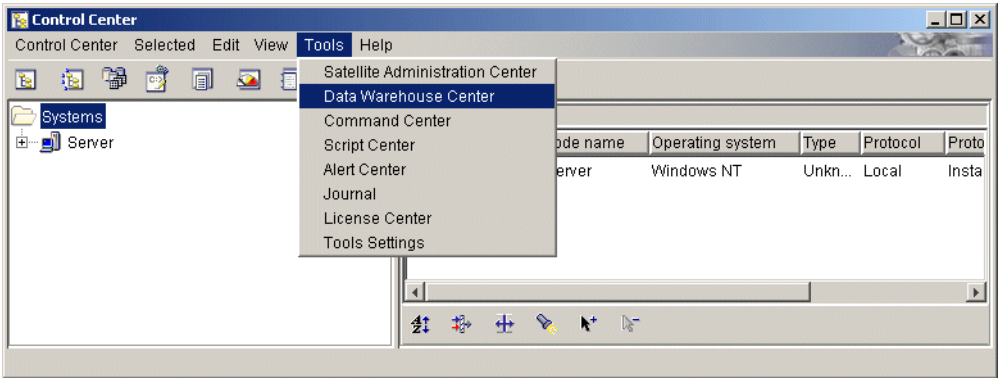
To configure the warehouse pack:

1 Following the instructions in *Installing and Configuring Tivoli Enterprise Data Warehouse*, specify the Control database for the DB2 Data Warehouse Center to TWH_MD.



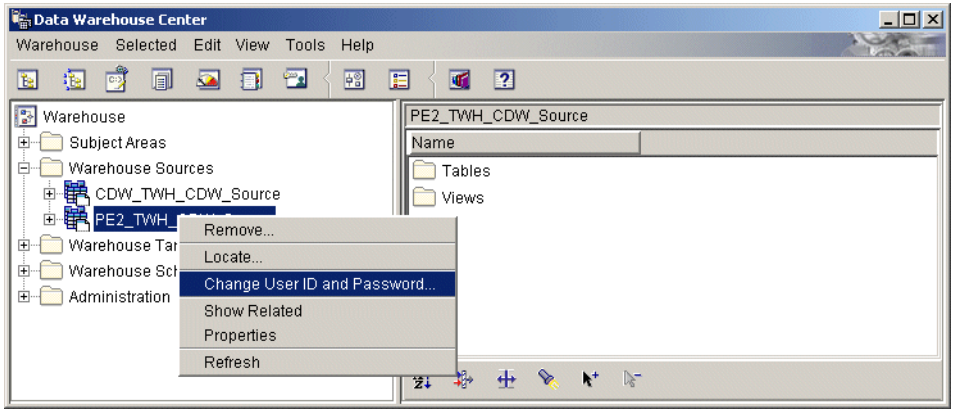
2 Open the IBM DB2 Control Center. (Go to **Start** > **Programs** > **IBM db2** > **Control Center.**)

3 From the **Tools** menu, select **Data Warehouse Center**.



4 Log on to the Data Warehouse Center.

5 Specify the User ID and Password for the Warehouse Source, PE2_TWH_CDW_Source.



a In the User ID field, type the User ID used to access the central data warehouse database (the instance name for the <**configuration repository**>.) The default value is *db2admin*.

b In the Password field, type the appropriate password.

6 Specify the properties for the warehouse target, PE2_TWH_CDW_Target.

   a In the User ID field, type the user ID used to access the central data warehouse database. The default value is *db2admin*.

   b In the Password field, type the password.

Setting up the warehouse pack configuration files

The PE2_c05 Load_Service_Desk_Data_Process uses the sd_cfg.xml file to determine where the XML files to be processed are located, and where to put the data. The sd_cfg.xml file contains the paths to the XML files that move the data. Edit the sd_cfg.xml file to enter the correct path and filenames for the XML sources and targets. The states file contains the paths to the DTD file. Edit the State file to enter the correct path and filename for the DTD file.

To edit the configuration and states files:

1 Open the file <TWH_TOPDIR>\apps\pe2\v110\misc\transforms\sd_cfg.xml for editing.

2 For each source Incident file and each source Call file you intend to transform and insert into the Warehouse, add the following line to the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

   <incident-file name="fully_qualified_source_filename" />

   where "fully_qualified_source_filename" (including the double quotes) is the full path of the source file.

   Note: After your modifications are complete, the sd_cfg.xml file should contain two lines starting with the *<incident-file name=* parameter. One is for incident data and the other is for probsummary data.

   For Windows add:

   - <incident-file name= "C:\Progra~1\TWH\apps\pe2\v110\misc\source\probsummary.xml" />.
   - <incident-file name= "C:\Progra~1\TWH\apps\pe2\v110\misc\source\incidents.xml" />.

3 For each source Change Request file you intend to transform and insert into the Warehouse, add the following line to the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

<change-file name="fully_qualified_source_filename" />

where "fully_qualified_source_filename" (including the double quotes) is the full path of the source file.

For Windows add:

- <change-file name= "C:\Progra~1\TWH\apps\pe2\v110\misc\source\cm3r.xml" />.

4 For the states file, add the following line to the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

<*state-machine-file name="fully_qualified_source_filename*" />

where "*fully_qualified_source_filename*" (including the double quotes) is the full path of the source file.

For Windows add:

- <state-machine-file name= "C:\Progra~1\TWH\apps\pe2\v110\misc\source\change_states.xml" />.

Note: This path and filename may vary with your installation.

5 For the XML file containing the configuration codes, add the following line to the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

<*sd-codes name="fully_qualified_config_filename*" />

where "*fully_qualified_config_filename*" (including the double quotes) is the full path of the source configuration file.

For Windows add a path and filename such as:

<sd-codes name= "C:\Progra~1\TWH\apps\pe2\v110\misc\source\sd_config.xml" />.

Note: This path and filename may vary with your installation.

6 When the warehouse pack runs, it creates the target XML (cdw.xml). Peregrine recommends that you use the default path or target file name, but you can change it if necessary.

To change the path or target file name, edit the following line in the sd_cfg.xml file:

<cdw-file name="*fully_qualified_target_filename*" />

where "*fully_qualified_target_filename*" (including the double quotes) is the full path of the source file.

The example:

```
<cdw-file name=
"C:\Progra~1\TWH\apps\pe2\v110\misc\target\myCDW.xml" />
```

renames the target central data warehouse XML to the value entered in the sd_cfg.xml file.

The new name has _<timestamp> appended to the name with the same .xml extension.

Note: If your source files include a large number of records (more than 175 records), the ETL divides the file into smaller files. Each smaller file has _<*n*> appended to its filename, where <*n*> is an index to the file.

7 Search the sd_cfg.xml file for spaces in paths and filenames, and remove them. For example, replace all instances of Program Files with Progra~1.

8 Open the change_states.xml file and confirm that the path to the sd_states.dtd file is correct. The path to the file is:

- C:\Progra~1\TWH\apps\pe2\v110\misc\source\change_states.xml

For Windows, the correct default sd_states.dtd path would be:

```
<!DOCTYPE ProcessDefinition SYSTEM
"C:\Progra~1\TWH\apps\pe2\v110\misc\dtds\sd_states.dtd">
```

The ETL installation and configuration is now complete. You should find the following Data Source and Data Target objects in your DB2 Data Warehouse Center, under Warehouse sources and Warehouse Targets respectively.

- Data Sources: PE2_TWH_CDW_Source
- Data Targets: PE2_TWH_CDW_Target.

Also, the CDW database (TWH_CDW) should contain the following tables in .../instances/DB2/TWH_CDW/Tables:

- STAGE_COMP
- STAGE_COMPATTR
- STAGE_COMPRELN
- STAGE_MGRPMBR
- STAGE_MSMT
- STAGE_MSMTRUL
- STAGE_MSMTTYP

Multiple data centers

After you install the warehouse pack, you can configure Tivoli Enterprise Data Warehouse to separate data for multiple data centers. To configure this, you create SQL scripts with the following values:

Information for scripts	Value or location
Field in source data	Fully qualified host name
Name of lookup table	SD.centr_lookup table
Name of center list	TWG.Centr

For more information see *Installing and Configuring Tivoli Enterprise Data Warehouse*.

After the initial configuration for multiple data centers, modify the tables when adding or removing data centers.

Multiple customer environments

After you install the warehouse pack, you can configure Tivoli Enterprise Data Warehouse to separate data for the multiple customer environments. To configure this, you create SQL scripts with the following values:

Information for scripts	Value or location
Field in source data	Fully qualified host name
Name of lookup table	SD.cust_lookup table
Column to use for lookup	<select either Cust_ID or Cust_Acct_Cd>
Name of customer list	TWG.Cust

For more information see *Installing and Configuring Tivoli Enterprise Data Warehouse*.

After the initial configuration of multiple customer environments, you modify the tables when adding or removing customers.

Uninstalling the warehouse pack

To uninstall the warehouse pack, use the warehouse pack uninstall process. See *Installing and Configuring Tivoli Enterprise Data Warehouse* for details.

To uninstall the warehouse pack:

▶ Uninstall the warehouse pack as described in *Installing and Configuring Tivoli Enterprise Data Warehouse*. During this process, you provide a three-character identifier for the warehouse pack. The three-character identifier of this warehouse pack is *pe2*.

The uninstallation process removes the application-specific tables, but the data in the central data warehouse database remains and is still usable by other applications.

Configuring the Connect-It scenario

To configure the Connect-It scenario, you configure each of the following three scenarios:

- SC5Xprobsummary.to.Tivoli Enterprise Data Warehouse.scn
- SC5Xincidents.to.Tivoli Enterprise Data Warehouse.scn
- SC5Xcm3r.to.Tivoli Enterprise Data Warehouse.scn

After installation, the scenarios are located in:
C:\Program Files\Peregrine\ConnectIt\scenario\SCtoTEDW\.

This following example illustrates one way to perform the configuration. However, your actual configuration may vary.

To configure a scenario:

1. Start the ServiceCenter server.
2. Open the scenario in Connect-It. (Use **File** > **Open**, or double-click the scenario.
3. Check **Advanced Configuration** the **Tools** menu.
4. From the **Scenario** menu, select **User Formats**.
5. Confirm that there is a line that points to the date.usr file. For the example, it should be located under the line:
C:\Program Files\Peregrine\ConnectIt\config\shared\usrfrmt\usrfrmt.usr.

6 If there is no line listing date.usr as a user format, add a line indicating the path of the date.usr file:
C:\Program Files\Peregrine\ConnectIt\scenario\SCtoTEDW\date.usr

7 Configure the ServiceCenter Connector.

a Right-click on the ServiceCenter connector, and select **Configure connector**.

b Click **Next**.

c Enter the ServiceCenter **Server name**, **Login**, and **Password** information.

d Click **Test** to confirm the connection to your ServiceCenter instance.

If the test was successful, close the test window. If the test was not successful, close the test window, correct the information, and test the connection again. Make sure that the ServiceCenter server is running during the entire process.

e After you can connect successfully, click **Next**.

f Set the database description file to point to the location of the scdb51TEDW.cfg file. For the example use:
C:\Program Files\Peregrine\ConnectIt\config\sc\scdb51TEDW.cfg.

g Configure the other settings as appropriate.

h Click **Finish**.

8 Configure the XML connector.

a Right-click the XML connector and select **Configure Connector**.

b Click **Next**.

Note: The scenario assumes that one machine or a shared file system places the XML documents into the source directory.

c Select a connection protocol. For example, select **Local/Network file (s)**, and click **Next**.

d On the **Choose a file or folder** screen:

- Choose **Write the documents to a single file**.
- Enter the source directory of the warehouse pack in the **Name of the folders** text box. For example, the default windows directory would be: C:\Program Files\TWH\apps\pe2\v110\misc\source\.

e On the **Behavior between two sessions** screen, select **Append to the same file** and click **Next**.

f On the **Choose a DTD/XSD** screen, browse to the correct .dtd file.

- For SC5Xprobsummary.to.Tivoli Enterprise Data Warehouse.scn point to incident.dtd.
- SC5Xincidents.to.Tivoli Enterprise Data Warehouse.scn point to incident.dtd.
- For SC5Xcm3r.to.Tivoli Enterprise Data Warehouse.scn point to change.dtd.

For example point to C:\Program Files\Peregrine\ConnectIt\scenario\SCtoTEDW\ *<Change.dtd>* (or *<incident.dtd>*.)

g Select **Do not use reference to the resulting DTD in the XML file.**

h Select **Publish a document type for each root element found in the DTD/XSD.**

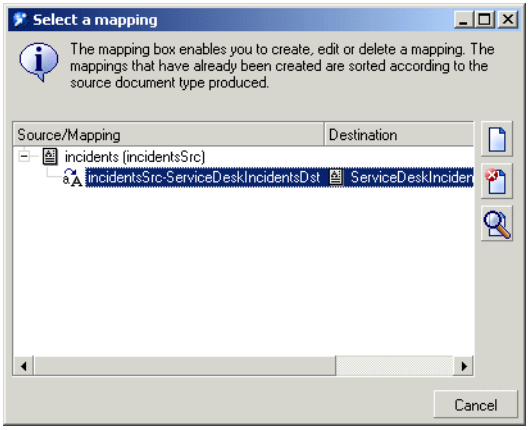
i Select other settings if necessary.

j Click **Finish** to complete setting up the XML connector.

9 Configure the Mapping connector.

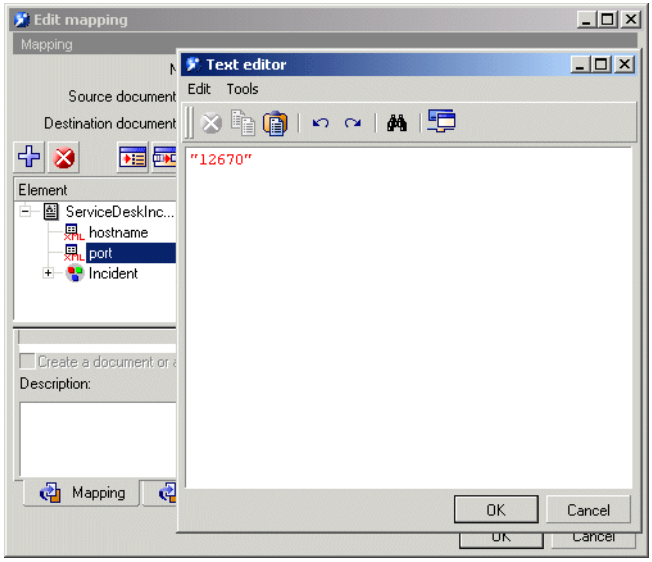
a Right-click the Mapping connector, and select **Edit a mapping** from the drop-down menu.

b Double-click the mapping that you want to edit.



c When the Edit Mapping dialog box opens, right-click the port and select **Edit Mapping.**

Note: There can be multiple instances of the ServiceCenter server running on the same machine. A port and hostname uniquely identify the ServiceCenter instance.



d Enter the port for the correct instance of ServiceCenter in the text editor and click **OK**.

e Right-click host name, and select **Edit Mapping**.

f Enter the hostname for the correct instance of ServiceCenter in the text editor and click **OK**.

g Click **Finish**.

CHAPTER 3

Transforming ServiceCenter Data

This chapter describes how to transfer data, and how to maintain the data after you load it.

Topics in this chapter include:

Testing the Connect-It scenarios

You can run the Connect-It scenarios on a small subset of records to check whether XML files were created successfully.

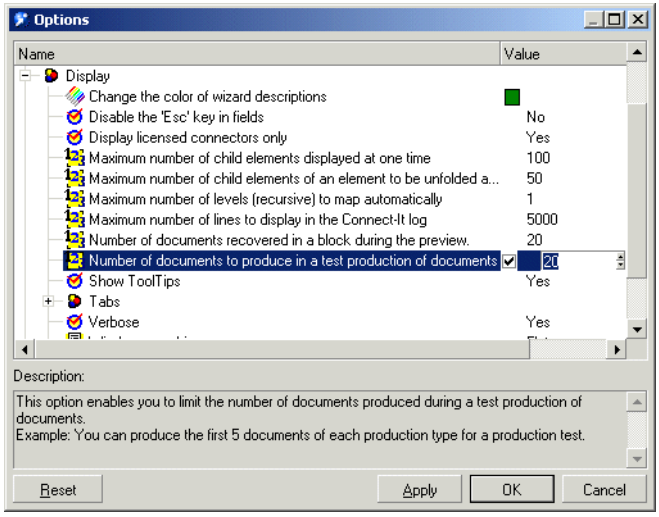
Create a subset of records for testing

To create a subset of converted records:

1 Start Connect-It!

2 Select **Options** from the **Edit** menu.

3 In the Options window, open Display, and check **Number of documents to produce in a test production of documents.**



4 Enter the number of documents. In this example, only 20 records will be converted.

5 Click **OK** to save and exit.

Important: Be sure to remove this selection when moving into production! For more information, see *Remove the limit on the number of records converted by Connect-It* on page 59.

Test the scenarios by running them without scheduling them.

To run a scenario without scheduling it:

1 Start ServiceCenter.

2 Open the scenario in Connect-It using one of the following methods:

- Start Connect-It, and select the scenario using **File** > **Open**.
- Double-click the scenario in Windows Explorer.

3 Run the scenario using one of the following methods:

- Select **Tools** > **Produce now**.
- Press F5.

- Click **Produce now**.

After all three scenarios have been run, you can examine your test data in the XML files.

Testing the ETL processes

If you run tests on your production system, your test data will be copied to your production system. To avoid this, test the ETL processes on a test system.

Change paths and filenames in sd_cfg.xml

You can change the configuration files to point files that contain test data.

To change the path or filename in the configuration files:

1 Open the following file for editing:
<TWH_TOPDIR>\apps\pe2\v110\misc\transforms\sd_cfg.xml

Note: The sd_cfg.xml file should contain two lines starting with the *<incident-file name=* parameter. One is for incident data and the other is for probsummary data.

2 For the incidents file, edit the following line in the sd_cfg.xml file:

<incident-file name="fully_qualified_source_filename" />

where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.

3 For the probsummary file, edit the following line in the sd_cfg.xml file:

<incident-file name="fully_qualified_source_filename" />

where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.

4 For the change file, add the following line to the sd_cfg.xml file:

<change-file name="fully_qualified_source_filename" />

where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.

Run the processes manually

Run the ETL processes manually to test the transfer of data from the XML files into the CDW. For more information, see *Installing and Configuring Tivoli Enterprise Data Warehouse*.

To run the processes manually:

1 Open the IBM DB2 Control Center. (Go to **Start** > **Programs** > **IBM db2** > **Control Center**.)

2 From the **Tools** menu, select **Data Warehouse Center**.

3 Log in.

4 Under **Warehouse**, open **Subject Areas**.

5 Set each step in each of the processes provided by the warehouse pack to Test mode.

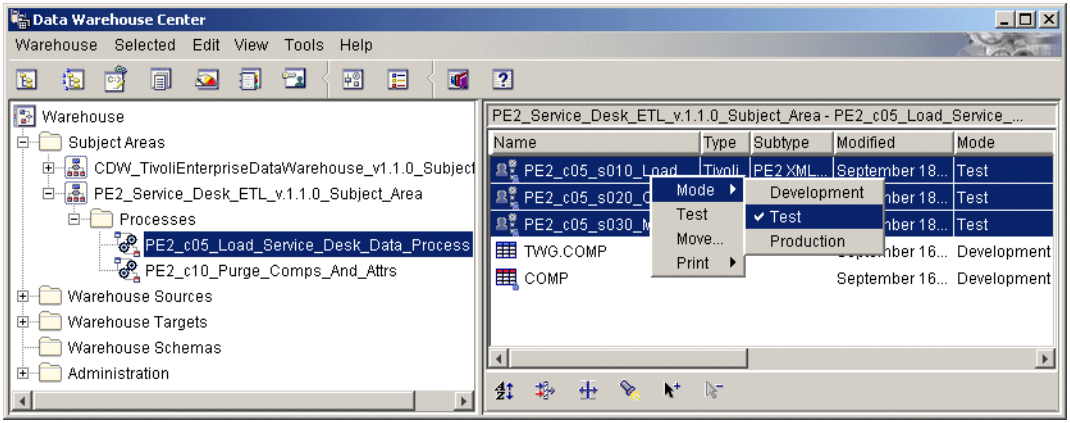
a Under **Processes**, select **PE2_c05_Load_Service_Desk_Data_Process.**

This process moves data from ServiceCenter to DB2. For more information, see *PE2_c05_Load_Service_Desk_Data_Process* on page 21.

b Highlight the Process steps:

- PE2_c05_s010_Load_Into_Staging
- PE2_c05_s020_Comp
- PE2_c05_s030_Msmt

c Right-click the process steps and select **Test** from the **Mode** menu.



- Under **Processes**, select **PE2_c10_Purge_Comps_And_Attrs.**

  This process purges the **comps** table and the **attrs** table used in the ETL processing. For more information, see *PE2_c10_Purge_Comps_And_Attrs* on page 21.

d Highlight the process step PE2_c10_s010_Purge_Comps.

e Right-click the process step and select **Test** from the **Mode** menu.

Note: ServiceCenter Incidents, Calls, and Changes are all stored in the same Tivoli Enterprise Data Warehouse file.

6 Run the test.

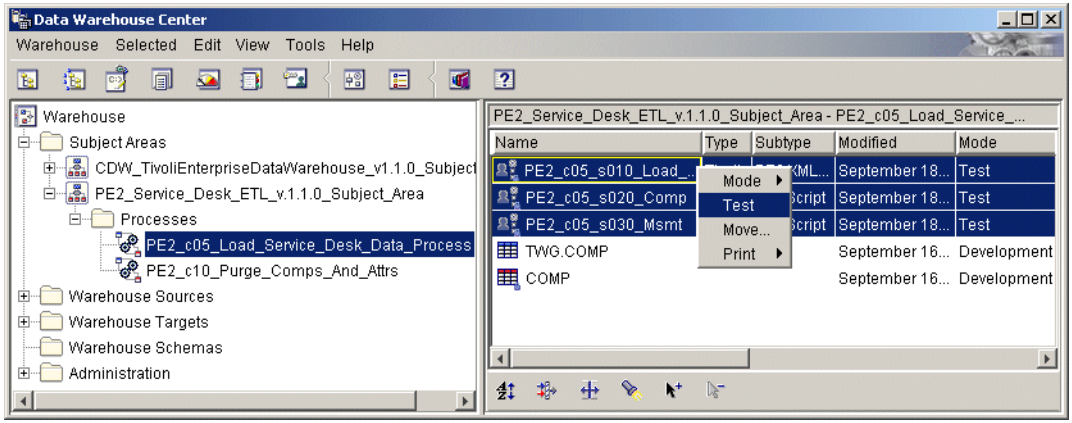
a Under **Processes**, select **PE2_c05_Load_Service_Desk_Data_Process.**

  This process moves data from ServiceCenter to DB2. For more information about this process, see *PE2_c05_Load_Service_Desk_Data_Process* on page 21.

b Highlight the Process steps:

- PE2_c05_s010_Load_Into_Staging
- PE2_c05_s020_Comp
- PE2_c05_s030_Msmt

c Right-click the process steps and select **Test**.



- Under **Processes**, select **PE2_c10_Purge_Comps_And_Attrs.**

  This process drops and recreates all XML staging tables used in the ETL processing. For more information, see *PE2_c10_Purge_Comps_And_Attrs* on page 21.

d Highlight the process step PE2_c10_s010_Purge_Comps.

e Right-click the process step and select **Test**.

Note: ServiceCenter Incidents, Calls, and Changes are all stored in the same Tivoli Enterprise Data Warehouse file.

After the transfer is complete, the test data should be visible in DB2.

Transforming and loading data

To transform and load your data:

Step 1 Remove the limit on the number of records converted by Connect-It, as described in the following section. Perform this step only if you set such a limit, as described in the section *Create a subset of records for testing* on page 54.

Step 2 Schedule Connect-It scenarios. The steps required are found in the section that begins on page 60. This is a required step.

Step 3 Change the paths and filenames in the **sd_cfg.xml** file, as described in the section on page 60. Perform this step only if you changed the paths or filenames.

Step 4 Set the ETL Processes to production mode. This is described in the section on page 61. Perform this step only if you set the processes to test mode.

Step 5 Schedule the ETL processes. This is described in the section on page 62. This is a required step.

Remove the limit on the number of records converted by Connect-It

If you set a limit on the number of ServiceCenter records that are converted, remove the limit before cutover to production.

Note: The steps for setting a limit for testing were described in the section *Create a subset of records for testing* on page 54.

To remove the limit on the number of records to be converted:

1. Start Connect-It Scenario Builder.
2. Select **Options** from the **Edit** menu.
3. In the Options window, open Display, and remove the check by **Number of documents to produce in a test production of documents**.
4. Click **OK** to save and exit.

Schedule the Connect-It scenarios

You can schedule Connect-It scenarios to run automatically, as frequently as necessary to handle the workload in your organization.

To maximize efficiency, co-ordinate the Connect-It run schedule with the schedule of your warehouse processes. If Connect-It scenarios run multiple times before the warehouse processes run, the processes will create duplicate records in DB2, and duplicate key errors as well.

For information on how to schedule Connect-It scenarios, see the *Connect-It User's Guide*.

Change paths and filenames in sd_cfg.xml

During testing you might have changed the configuration file to point to test data. If so, you now change the configuration file to point to files that contain actual production data.

To change the path or filename in the configuration files:

1. Open the file <TWH_TOPDIR>\apps\pe2\v110\misc\transforms \sd_cfg.xml for editing.
2. For the incidents file, add the following line in the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

   <incident-file name="fully_qualified_source_filename" />

   where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.
3. For the probsummary file, add or edit the following line in the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

   <incident-file name="fully_qualified_source_filename" />

   where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.
4. For the change file, add the following line to the sd_cfg.xml file anywhere between the <**configuration**> and </**configuration**> tags:

   <change-file name="fully_qualified_source_filename" />

   where *"fully_qualified_source_filename"* (including the double quotes) is the full path of the source file.

Change the path and file names in the state files

During the testing process, you may have changed the state file to point to files that contain test data. If so, change the states file to point to the files that contain actual production data.

1 Open the change_states.xml file and, if necessary, edit the path to the file sd_states.dtd.

- C:\Program Files\Twh\apps\pe2\v110\misc\source\change_states.xml

For Windows, the path default sd_states.dtd path is:

```
<!DOCTYPE ProcessDefinition SYSTEM"
C:\Progra~1\TWH\apps\pe2\v110\misc\dtds\sd_states.dtd">
```

Set the ETL processes to production mode

During your testing process, you may have set the ETL process steps to Test mode. If you did, you must now change them to production mode.

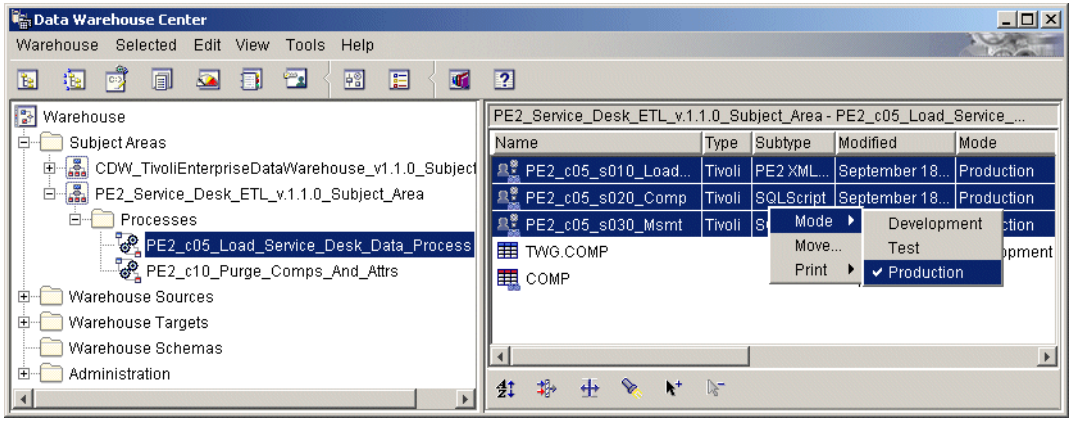
To set the processes to production mode:

1 Open the DB2 Control Center. (Go to **Start** > **Programs** > **IBM db2** > **Control Center**.)

2 Set each step in each of the processes provided by the warehouse pack to Production mode.

The processes are located in the Warehouse under Subject Areas > PE2_Service_Desk_ETL_Subject_Area > Processes.

- PE2_c05_Load_Service_Desk_Data_Process contains three steps. For more information about this processes, see *PE2_c05_Load_Service_Desk_Data_Process* on page 21.
- PE2_c10_Purge_Comps_And_Attrs contains one step. For more information about this processes, see *PE2_c10_Purge_Comps_And_Attrs* on page 21.



Schedule the ETL processes

Specify dependencies between processes and schedule processes that are to run automatically. The processes for the warehouse pack are located in the PE2_ServiceDesk_ETL_Subject_Area subject area.

To schedule the processes:

1. Link the steps to run in the following order:
   a. PE2_c05_Load_Service_Desk_Data_Process
      - PE2_c05_s010_Load_Into_Staging
      - PE2_c05_s020_Comp
      - PE2_c05_s030_Msmt
   b. PE2_c10_Purge_Comps_And_Attrs
      - PE2_c10_s010_Purge_Comps
2. Schedule the processes to run regularly, selecting a frequency appropriate for your load. Co-ordinate the Connect-It schedule with the schedule of the warehouse processes. If the Connect-It scenarios run multiple times before the warehouse processes run, the processes will create duplicate records in DB2, and duplicate key errors will result.

   For information on how to schedule warehouse processes, see *Installing and Configuring Tivoli Enterprise Data Warehouse*.

Maintenance

Pruning the TWH_CDW database

To manage the high volume of data, use the prune table to delete data. Pruning data from the measurement (Msmt) table combines triggers and the CDW_C05_PurgeMsmt_Process warehouse process. The PE2.Prune_Msmt_Log table keeps a history of data deletion.

Schedule how often you want the CDW_C05_PurgeMsmt_Process warehouse process to run (for example, weekly or monthly). By default, the CDW_C05_PurgeMsmt_Process warehouse process prunes all Peregrine ServiceCenter application data over one year old.

To modify the default date duration value, run the following SQL statement, where X is a date duration in the format yyyymmdd (for example, *X* = 00000108, which represents 0000 years, 01 months, 08 days).

```
UPDATE TWG.Prune_Msmt_Control
SET PMSMTC_AGE_IN_DAYS = X
WHERE TMSUM_CD = 'H' AND MSRC_CD = 'PE2'
```

Note: This warehouse uses an addition pruning table along with that provided in other warehouse packs. The process step PE2_c10_Purge_Comps_And_Attrs uses that additional table.

Pruning the Central data warehouse database

The prune measurement control table (Prune_Msmt_Control) governs the pruning of data from the warehouse. By default all data older than one year is deleted when the CDW_c05_Prune_and_Mark_Active process runs.

Measurement data is deleted from the Msmt table once a year. This is based on the age specified in the PMsmtC_Age_In_Days column.

Extraction control (table Extract_Ctrl)

The warehouse pack does insert a record into the extract control table, the table is not used. Extract control is used for reading out of a database. This warehouse pack does not read directly from the database.

ExtCtl_Source VARCHAR (120)	ExtCtl_Target VARCHAR (120)	ExtCtl_From_RawSeq CHAR (10)	ExtCtl_to_RawSeq CHAR (10)	ExtCtl_From_IntSeq BIGINT	ExtCtl_To_IntSeq BIGINT	ExtCtl_From_DtTm TIMESTAMP	ExtCtl_To_DtTm TIMESTAMP
'PE2_SRC'	'TWH_CDW'	x'00000000000000000000'	x'00000000000000000000'	0	0	'1970-01-01-00.00.00.000000'	'1970-01-01-00.00.00.000000'

Troubleshooting

If the correct data do not appear in DB2, examine the cm3r.xml, probsummary.xml, or incidents.xml files to determine whether the correct conversion is taking place. See *Mapping ServiceCenter data* on page 23 for data mapping information.

Tivoli Enterprise Data Warehouse problems

For common problems and solutions, see the *Installing and Configuring Tivoli Enterprise Data Warehouse* guide.

The Connect-It Message window

Message

The scenario was executed in test mode. No data was written to the destination.

Possible cause

The scenario has been set to Test mode.

Solution

From the Connect-It **Scenario** menu, remove checkmark beside **Test mode**.

The Connect-It log

Message

Cannot open file C:\...\tracking.idx. (Errno=3) The system cannot find the path specified.

Possible cause

The path to the tracking file is not correct.

To fix this problem:

1. From the Connect-It **Log** menu, select **Configure Document log...**.
2. Enter a valid page for the file in the **Tracking line file** text box.

Message

Unable to connect to the server to get the version number.

Possible cause 1

ServiceCenter server is not running.

To fix this problem:

- Start the ServiceCenter server.

Possible cause 2

The ServiceCenter connector is looking in the wrong place.

To fix this problem:

1. Right-click the ServiceCenter connector, and select **Configure Connector** from the drop-down menu.
2. Step through the process. When prompted, enter the correct server name in the **Server** text box.

Message

Connection refused: Invalid password for login <*your login*>.

Possible cause

The connector is using the wrong password.

To fix this problem:

Right-click the ServiceCenter connector, and select **Configure Connector** from the drop-down menu.

Step through the process. When prompted, enter the correct password in the **Password** text box.

Message

Connection refused: Login 'your login' unknown.S

Possible cause

The connector is using the wrong login.

To fix this problem:

1. Right-click the ServiceCenter connector, and select **Configure Connector** from the drop-down menu.
2. Step thought the process. When prompted, enter the correct server name in the **Server** text box.

The sd_execute.log

The sd_execute.log is a useful when testing the PE2_c05_s010_Load_Into_Staging step. It is located in the C:\Program Files\sqllib\logging\ directory.

Error Message

'C:\Program' is not recognized as an internal or external command, operable program or batch file.

Possible cause

The there is a space in a path given in sd_cgf.xml.

To fix this problem:

In the sd_cfg.xml file, replace all cases of <C:\Program Files>, with <C:\Progra~1>.

The sd_cfg.xml file is located in the <TWH_TOPDIR>\apps\pe2\v110\misc\transforms\ directory.

Error Message

file:///C:/Progra~1/TWH/apps/pe2/v110/misc/transforms/sd_transform.xsl ; Line #36; Column #60; Cannot load requested doc: <C:\TWH\apps\pe2\v110\misc\dtds\sd_states.dtd> (The system cannot find the path specified.)

Possible cause

The path to the sd_states.dtd file is incorrect in the states file.

To fix this problem:

- Correct the path for **sd_states.dtd** in the appropriate XML file.

  For Windows, the correct default path is:
  C:\Program Files\Twh\apps\pe2\v110\misc\source\change_states.xml

Duplicate key errors

Possible cause

The Connect-It scenarios ran more than once before the warehouse processes ran. The same record was added to the XML file more than once. When the warehouse processes ran, they transferred duplicate records to DB2.

To fix this problem:

- Co-ordinate the Connect-It schedule with the schedule of the warehouse processes.

  For information on how to schedule warehouse processes, see *Installing and Configuring Tivoli Enterprise Data Warehouse*. For information on how to schedule Connect-It scenarios, see the *Connect-It User's Guide*.

CHAPTER 4 Central Data Warehouse Schema Implementation

This chapter provides information on what data should go into the incident and change database tables and about what type of data goes into the fields.

Before reading this chapter, read about central data warehouse schema in *Enabling an Application for Tivoli Enterprise Data Warehouse*. That document defines the content of each table and explains the relationships between the tables in this guide.

Topics in this chapter include:

Sample Incident

On November 4th...

November 4th, at 9:42 AM (open time) Ted, the mortgage clerk, opened a severity 1 Incident (1088) stating that he cannot login to the mortgage application.

November 4th, at 10:20 AM (accept) Alice, the Senior IT Administrator, responded to Ted's incident by saying that they are investigating what the cause is.

November 4th, at 11:35 AM Marty, the Security Administrator, sees a problem (with the LDAP database) related to Ted's incident. Marty completes this fix.

November 4th, at 12:40 PM Alice leaves voicemail for Ted, who was out to lunch, saying that the problem was repaired. Alice closes the incident.

Incident details

These attribute values describe the sample Incident.

Note: A blank Value means that this information is not valid for this Incident.

Table 4-1: Incident attribute values

Attribute	Value
PRIORITY	2
IP_HOSTNAME	
LAST_IP_ADDRESS	
SEVERITY	1
SD_USERID	Teddy (on SD_USER component)
SD_STATUS_CODE	Accepted
CONTACT	Ted Jones
COMPANY	BIGBANK
E_MAIL_ADDRESS	teddy@bigbank.com
PHONE_NUMBER	111-222-3333 (on SD_USER component)
CELL_PHONE_NUMBER	444-555-5555 (on SD_USER component)

Table 4-1: Incident attribute values

Attribute	Value
SITE	Moorefield
SD_SITE_CATEGORY	Remote
DIVISION	46
DEPARTMENT	VISA
OWNER	Alice
SD_SYSTEM	Business Applications
SD_COMPONENT	Security
SD_ITEM	Mortgage Application
SD_MODULE	
SD_PRODUCT_TYPE	Business application
SD_PROBLEM_TYPE	Client specific
SD_CAUSE_CODE	Fault
SD_ASSETS_AFFECTD	
SD_RELATED_CHNGS	
DESCRIPTION	Ted cannot login to the mortgage application
ABSTRACT	login to the mortgage application fails
OPEN_TIMESTAMP	Nov 4th 9:42 AM
FIX_TIME	
CLOSE_TIMESTAMP	November 4th, at 2:35
SD_USER_TYPE	Contact (against SD_USER)
SD_ASSIGN_GROUP	Software
FIRST_NAME	Ted (on SD_USER component)
LAST_NAME	Jones (on SD_USER component)
EMPLOYEE_NUMBER	217-45-9873 (on SD_USER component)
ASSIGNEE_NAME	Marty
TYPE	Call

Sample Change request

On November 12th...

November 12th, at 9:42 AM Linda, the director of Lending Services opens a change (C1235) request to have all of their Lotus Notes clients upgraded from 4.6 to 5.0.

December 9th, at 10:20 AM Jerry, the Lending Services Coordinator, finishes evaluating Linda's request and hands it off to Alice to make a recommendation.

December 13th, at 11:35 AM Alice approves the request and hands the request now to James, the applications specialist, to perform the upgrade.

December 17th, at 11:35 AM James begins upgrading all of Linda's departments Lotus Notes clients.

December 23rd, at 11:40 PM James completes upgrading all of Lending Services Lotus Notes clients.

Change details

These attribute values describe the sample Change request.

Note: A blank Value means that this information is not valid for this change request.

Table 4-2: Change attribute values

Attribute	Value
CR_PRIORITY	3
IP_HOSTNAME	
LAST_IP_ADDRESS	
SD_USERID	LindaD (on SD_USER component)
CONTACT	Linda
COMPANY	BIGBANK
E_MAIL_ADDRESS	TheDirector@bigbank.com
PHONE_NUMBER	123-987-8888
CELL_PHONE_NUMBER	123-596-6966

Table 4-2: Change attribute values

Attribute	Value
DIVISION	ABC
DEPARTMENT	BVDA
SD_SYSTEM	Application
SD_COMPONENT	Lotus Notes
SD_ITEM	Client
SD_MODULE	
SD_ASSETS_AFFECTD	A1234.A2345.A3456.A4567.A5678.A6789
SD_RELATED_INCS	
DESCRIPTION	Upgrade all Lotus Notes clients from 4.6 to 5.0 for department BVDA.
ABSTRACT	Lotus Notes clients upgraded from 4.6 to 5.0
SD_RISK_LEVEL	2
CR_PLAN_START	December 17th 00:00:00
CR_ACT_START	December 17th, at 11:35 AM
CR_PLAN_OUTAGE_ST	
CR_ACT_OUTAGE_ST	
CR_PLAN_END	December 19th 00:00:00
CR_ACT_END	December 23rd 11:40 PM
CR_PLAN_OUTAGE_ED	
CR_ACT_OUTAGE_ED	
APPROVAL_TIMESTAP	December 13th 11:35 AM
CR_REQUEST_DATE	November 12th 9:42 AM
CR_COMPLETE_DATE	December 23rd 11:40 PM
CR_APP_ACTION	Approved
APPROVER_NAME	Alice Mike John
CR_COMPLETION_CD	1
OPEN_TIMESTAMP	November 12th, at 9:42
CR_BACKOUT_PLAN	Switch back to Notes 4.6

Table 4-2: Change attribute values

Attribute	Value
SD_COORDINATOR_NM	Jerry
CR_START_DELAY	11 hours, 35 minutes
CR_END_DELAY	4 days, 23 hours, 40 minutes
SD_USER_TYPE	(Requester - on SD_USER component)
FIRST_NAME	Linda (on SD_USER component)
LAST_NAME	Jeffrey (on SD_USER component)
EMPLOYEE_NUMBER	217-974-0000 (ON SD_USER component)
ASSIGNEE_NAME	Jimbob
CR_APP_STATUS	Approved
CR_STATUS_CODE	Open

Sample Change task data

Attribute	Value
CR_TASK_PHASE	Update client
DESCRIPTION	Update client machine
CR_PLAN_START	December 17th 00:00:00
CR_PLAN_END	December 18th 00:00:00
CR_TASK_STATUS	Initial

Component configuration

Component type (table CompTyp)

CompTyp_Cd CHAR (17)	CompTyp_Parent_ Cd CHAR (17)	CompTyp_Nm VARCHAR (120)	CompTyp_Strt_ DtTm TIMESTAMP	MSrc_Cd* CHAR (6)	CompTyp_End_ DtTm TIMESTAMP
SERVICE_DESK	NULL	Service Desk	2002-04-04-00.00.00.000000	MODEL1	9999-01-01-00.00.00.000000
INCIDENT	NULL	Incident	2002-04-04-00.00.00.000000	MODEL1	9999-01-01-00.00.00.000000
CHANGE_REQUEST	NULL	Change Request	2002-04-04-00.00.00.000000	MODEL1	9999-01-01-00.00.00.000000
SD_USER	NULL	Service Desk User	2002-04-04-00.00.00.000000	SDESK1	9999-01-01-00.00.00.000000
CR_TASK	NULL	Change Request Task	2002-04-04-00.00.00.000000	SDESK1	9999-01-01-00.00.00.000000

* Note - Reserved. This column is not available in Tivoli Enterprise Data Warehouse, Version 1.1.

Component (table Comp)

Comp_ID INTEGER	CompTyp_Cd CHAR (17)	Centr_Cd CHAR (6)	Cust_ID INTEGER	Comp_Corr_ID INTEGER	Comp_Nm VARCHAR (254)	Comp_Corr_Val VARCHAR (254)	Comp_Srt_DtTm TIMESTAMP	Comp_End_DtTm TIMESTAMP	Comp_Ds VARCHAR (254)	MSrc_Cd * CHAR (6)
1	SERVICE_DESK	CDW	1		GoTerps.9847		2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000		PE2
2	INCIDENT	CDW	1		I1088		2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Login to the mortgage applica-tion fails	PE2
3	SD_USER	CDW	1		Ted Jones		2002-11-04-00.00.00.000000	9999-01-01-00.00.00.000000		PE2
4	CHANGE_REQUEST	CDW	1		C1235		2002-11-12-00.00.00.000000	9999-01-01-00.00.00.000000	Lotus Notes clients upgraded from 4.6 to 5.0	PE2
5	SD_USER	CDW	1		Linda		2002-11-12-00.00.00.000000	9999-01-01-00.00.00.000000		PE2
6	CR_TASK	CDW	1		1		2002-11-12-00.00.00.000000	9999-01-01-00.00.00.000000	Update client machine	PE2

* Note - Reserved. This column is not available in Tivoli Enterprise Data Warehouse, Version 1.1.

Component relationship type (table RelnTyp)

RelnTyp_Cd CHAR (6)	MSrc_Cd CHAR (6)	RelnTyp_Nm VARCHAR (120)
CAUSES	MODEL1	Causes Relationship
PCHILD	MODEL1	Parent Child Relationship

Component relationship rule (table RelnRul)

CompTyp_Source_ Cd CHAR (17)	CompTyp_Target_ Cd CHAR (17)	RelnTyp_Cd CHAR (6)	RelnRul_Strt_DtTm TIMESTAMP	RelnRul_End_DtTm TIMESTAMP
INCIDENT	SD_USER	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000
SERVICE_DESK	INCIDENT	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000
SERVICE_DESK	CHANGE_REQUEST	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000
CHANGE_REQUEST	INCIDENT	CAUSES	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000
CHANGE_REQUEST	SD_USER	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000
CHANGE_REQUEST	CR_TASK	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000

Component relationship (table CompReln)

The REPRTS and the CAUSES relationships may not be implemented.

CompReln_ ID INTEGER	Comp_Source_ ID INTEGER	Comp_Target_ ID INTEGER	RelnTyp_ Cd CHAR (6)	CompReln_Strt_DtTm TIMESTAMP	CompReln_End_DtTm TIMESTAMP	Msrc_Cd * CHAR (6)
1	1	2	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	PE2
2	2	3	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	PE2

CompReln_ ID INTEGER	Comp_Source_ ID INTEGER	Comp_Target_ ID INTEGER	RelnTyp_ Cd CHAR (6)	CompReln_Strt_DtTm TIMESTAMP	CompReln_End_DtTm TIMESTAMP	Msrc_Cd * CHAR (6)
3	1	4	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	PE2
4	4	5	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	PE2
5	4	6	PCHILD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	PE2

* Note - Reserved. This column is not available in Tivoli Enterprise Data Warehouse, Version 1.1.

Attribute type (table AttrTyp)

AttrTyp_Cd CHAR (17)	MSrc_Cd* CHAR (6)	AttrTyp_Multi_ Val* CHAR (1)	AttrTyp_Nm VARCHAR (120)
PRIORITY	MODEL1	N	Priority
CR_PRIORITY	SDESK1	N	Change Request Priority
IP_HOSTNAME	MODEL1	N	IP Hostname
LAST_IP_ADDRESS	MODEL1	N	Last IP Address
SEVERITY	MODEL1	N	Severity
SD_USERID	SDESK1	N	User Identification (User ID)
CLOSED_BY	MODEL1	N	Closed By
IMPACT	MODEL1	N	Impact
DUE_DATE	MODEL1	N	Due Date
FIRST_CALL_RES	MODEL1	N	First Call Resolution
SD_STATUS_CODE	SDESK1	N	Service Desk Status Code
CR_STATUS_CODE	SDESK1	N	Change Request Status Code

AttrTyp_Cd CHAR (17)	MSrc_Cd* CHAR (6)	AttrTyp_Multi_Val* CHAR (1)	AttrTyp_Nm VARCHAR (120)
CONTACT	MODEL1	N	Contact
SD_REPORTD_BY_NM	SDESK1	N	Reported By
COMPANY	MODEL1	N	Company
E_MAIL_ADDRESS	MODEL1	N	E-Mail
PHONE_NUMBER	MODEL1	N	Phone Number
CELL_PHONE_NUMBER	MODEL1	N	Cell Phone Number
SITE	MODEL1	N	Site
SD_SITE_CATEGORY	SDESK1	N	Site Category
DIVISION	MODEL1	N	Division
DEPARTMENT	MODEL1	N	Department
OWNER	MODEL1	N	Owner
SD_SYSTEM	SDESK1	N	Service Desk System
SD_COMPONENT	SDESK1	N	Service Desk Component
SD_ITEM	SDESK1	N	Service Desk Item
SD_MODULE	SDESK1	N	Service Desk Module
SD_PRODUCT_TYPE	SDESK1	N	Product Type
SD_PROBLEM_TYPE	SDESK1	N	Problem Type
SD_CAUSE_CODE	SDESK1	N	Incident Cause Code
SD_ASSETS_AFFECTD	SDESK1	Y	Assets Affected
SD_RELATED_INCS	SDESK1	Y	Related Incidents
SD_RELATED_CHNGS	SDESK1	Y	Related Changes

AttrTyp_Cd CHAR (17)	MSrc_Cd* CHAR (6)	AttrTyp_Multi_Val* CHAR (1)	AttrTyp_Nm VARCHAR (120)
DESCRIPTION	MODEL1	N	Description
ABSTRACT	MODEL1	N	Abstract
SD_RISK_LEVEL	SDESK1	N	Request Risk Level
CR_PLAN_START	SDESK1	N	Change Request Planned Start Date and Time
CR_ACT_START	SDESK1	N	Change Request Actual Start Date and Time
CR_PLAN_OUTAGE_ST	SDESK1	N	Change Request Planned Outage Start Date and Time
CR_ACT_OUTAGE_ST	SDESK1	N	Change Request Actual Outage Start Date and Time
CR_PLAN_END	SDESK1	N	Change Request Planned End Date and Time
CR_ACT_END	SDESK1	N	Change Request Actual End Date and Time
CR_PLAN_OUTAGE_ED	SDESK1	N	Change Request Planned Outage End Date and Time
CR_ACT_OUTAGE_ED	SDESK1	N	Change Request Actual Outage End Date and Time
APPROVAL_TIMESTAP	MODEL1	N	Approval Timestamp
CR_REQUEST_DATE	SDESK1	N	Requested Date for the Change Request
CR_COMPLETE_DATE	SDESK1	N	Change Request Complete Date
CR_APP_ACTION	SDESK1	Y	Change Request Approval Actions
APPROVER_NAME	MODEL1	Y	Approver Name
CR_COMPLETION_CD	SDESK1	N	Completion Code
OPEN_TIMESTAMP	MODEL1	N	Open Timestamp
FIX_TIME	MODEL1	N	Fix Timestamp
CLOSE_TIMESTAMP	MODEL1	N	Close Timestamp
CR_BACKOUT_PLAN	SDESK1	N	Change Request Backout Plan

AttrTyp_Cd CHAR (17)	MSrc_Cd* CHAR (6)	AttrTyp_Multi_Val* CHAR (1)	AttrTyp_Nm VARCHAR (120)
SD_COORDINATOR_NM	SDESK1	N	Change Request Coordinator Name
CR_START_DELAY	SDESK1	N	Change Request Start Delay (in minutes)
CR_END_DELAY	SDESK1	N	Change Request End Delay (in minutes)
SD_USER_TYPE	SDESK1	Y	User Type
SD_ASSIGN_GROUP	SDESK1	N	Assignment Group
FIRST_NAME	MODEL1	N	First Name
LAST_NAME	MODEL1	N	Last Name
EMPLOYEE_NUMBER	MODEL1	N	Employee Number
ASSIGNEE_NAME	MODEL1	N	Assignee Name
TYPE	MODEL1	N	Type
CR_APP_STATUS	SDESK1	N	Change Request Approval Status
CR_TASK_STATUS	SDESK1	N	Task Status
CR_TASK_PHASE	SDESK1	N	Task Phase
CR_TASK_DESC	SDESK1	N	Task Description

* Note - Reserved. These columns are not available in Tivoli Enterprise Data Warehouse, Version 1.1.

Attribute rule (table AttrRul)

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_Ind CHAR
SD_USER	SD_USER_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
SD_USER	FIRST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_ Ind CHAR
SD_USER	LAST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	EMPLOYEE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	LAST_IP_ADDRESS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	SD_USERID	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	IP_HOSTNAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	CR_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	CONTACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CONTACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	COMPANY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	COMPANY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	COMPANY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	E_MAIL_ADDRESS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	SITE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	SD_SITE_CATEGORY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SITE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_SITE_CATEGORY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	DEPARTMENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	DEPARTMENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	DEPARTMENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_ Ind CHAR
SD_USER	DIVISION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	DIVISION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	DIVISION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	OWNER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	APPROVER_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	CR_PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	SD_SYSTEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	SD_SYSTEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	SD_ COMPONENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	SD_COMPONNET	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	SD_ITEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	SD_ITEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
INCIDENT	SD_MODULE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	SD_MODULE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_PRODUCT_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_PROBLEM_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_CAUSE_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	SD_RELATED_INCS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_ Ind CHAR
INCIDENT	SD_RELATED_CHNGS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	ABSTRACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	ABSTRACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
SD_USER	PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
SD_USER	CELL_PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_PLAN_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_ACT_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_PLAN_OUTAGE_ST	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_ACT_OUTAGE_ST	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_PLAN_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_ACT_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_PLAN_OUTAGE_ED	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_ACT_OUTAGE_ED	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	OPEN_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	OPEN_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	CLOSE_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	FIX_TIME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_BACKOUT_PLAN	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_ Ind CHAR
CHANGE_REQUEST	CR_COMPLETION_CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	CR_START_DELAY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_END_DELAY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	APPROVAL_TIMESTAP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_APP_ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	CR_APP_STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y
CHANGE_REQUEST	CR_COMPLETE_DATE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	CR_REQUEST_DATE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_REPORTD_BY_NM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	ASSIGNEE_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CHANGE_REQUEST	ASSIGNEE_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	SD_ASSIGN_GROUP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	CLOSED_BY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	IMPACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	DUE_DATE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
INCIDENT	FIRST_CALL_RES	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CR_TASK	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CR_TASK	CR_PLAN_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CR_TASK	CR_PLAN_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CR_TASK	CR_TASK_STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Y

CompTyp_Cd CHAR (17)	AttrTyp_Cd CHAR (17)	AttrRul_Strt_DtTm TIMESTAMP	AttrRul_End_DtTm TIMESTAMP	AttrRul_Dom_ Ind CHAR
CR_TASK	CR_TASK_PHASE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N
CR_TASK	CR_TASK_DESC	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	N

Attribute domain (table AttrDom)

AttrDom_ ID INTEGER	CompTyp_ Cd CHAR (17)	AttrTyp_ Cd CHAR (17)	AttrDom_Strt_ DtTm TIMESTAMP	AttrDom_End_ DtTm TIMESTAMP	AttrDom_ Val VARCHAR (254)	AttrDom_ Ds VARCHAR (254)
1	INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	1	Very High
2	INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	High
3	INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	Normal
4	INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	4	Low
5	INCIDENT	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	5	Very Low
6	CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	0	No Risk
7	CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	1	Low Risk
8	CHANGE_REQUEST	SD_ RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	Some Risk

AttrDom_ ID INTEGER	CompTyp_ Cd CHAR (17)	AttrTyp_ Cd CHAR (17)	AttrDom_Strt_ DtTm TIMESTAMP	AttrDom_End_ DtTm TIMESTAMP	AttrDom_ Val VARCHAR (254)	AttrDom_ Ds VARCHAR (254)
9	CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	Moderate Risk
10	CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	4	Some What High Risk
11	CHANGE_REQUEST	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	5	Very High Risk
12	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Open	The incident is in the open state
13	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Accepted	The incident has been accepted and is being worked on
14	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Rejected	The incident has been rejected
15	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Resolved	The incident has been resolved
16	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Closed	The incident is in the closed state
17	INCIDENT	SD_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Referred	The incident has been referred to another organization
18	INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	1	Very High
19	INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	High

AttrDom_ ID INTEGER	CompTyp_ Cd CHAR (17)	AttrTyp_ Cd CHAR (17)	AttrDom_Strt_ DtTm TIMESTAMP	AttrDom_End_ DtTm TIMESTAMP	AttrDom_ Val VARCHAR (254)	AttrDom_ Ds VARCHAR (254)
20	INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	Normal
21	INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	4	Low
22	INCIDENT	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	5	Very Low
23	CHANGE_ REQUEST	CR_PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	1	Emergency
24	CHANGE_ REQUEST	CR_PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	Expedited
25	CHANGE_ REQUEST	CR_PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	Normal
31	CHANGE_ REQUEST	CR_ COMPLETION_ CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	1	The request was successful
32	CHANGE_ REQUEST	CR_ COMPLETION_ CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	The request was successful with problems
33	CHANGE_ REQUEST	CR_ COMPLETION_ CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	The request was unsuccessful
34	CHANGE_ REQUEST	CR_ COMPLETION_ CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	4	The request was withdrawn

AttrDom_ ID INTEGER	CompTyp_ Cd CHAR (17)	AttrTyp_ Cd CHAR (17)	AttrDom_Strt_ DtTm TIMESTAMP	AttrDom_End_ DtTm TIMESTAMP	AttrDom_ Val VARCHAR (254)	AttrDom_ Ds VARCHAR (254)
35	CHANGE_ REQUEST	CR_ COMPLETION_ CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	5	The request was cancelled
36	SD_USER	SD_ USER_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Requester	
37	SD_USER	SD_ USER_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Contact	
42	CHANGE_ REQUEST	CR_STATUS_ CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Open	
43	CHANGE_ REQUEST	CR_STATUS_ CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Closed	
44	CHANGE_ REQUEST	CR_STATUS_ CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Reopened	
45	CHANGE_ REQUEST	CR_STATUS_ CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Waiting	
46	CHANGE_ REQUEST	CR_APP_ ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Pending	
47	CHANGE_ REQUEST	CR_APP_ ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Approved	
48	CHANGE_ REQUEST	CR_APP_ ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Denied	
49	CHANGE_ REQUEST	CR_APP_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Approved	
50	CHANGE_ REQUEST	CR_APP_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Denied	

AttrDom_ ID INTEGER	CompTyp_ Cd CHAR (17)	AttrTyp_ Cd CHAR (17)	AttrDom_Strt_ DtTm TIMESTAMP	AttrDom_End_ DtTm TIMESTAMP	AttrDom_ Val VARCHAR (254)	AttrDom_ Ds VARCHAR (254)
51	CR_TASK	CR_TASK_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Closed	
52	CR_TASK	CR_TASK_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Initial	
53	CR_TASK	CR_TASK_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Reopened	
54	CR_TASK	CR_TASK_ STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Waiting	

Component attribute (table CompAttr)

If a field is not available for a particular Incident, or Change, then the attribute value is not created. For example if an incident is opened against a batch job, then usually there is not a hostname or IP Address associated with that incident record. Therefore, for that incident record there would not be a row in the table below for IP_HOSTNAME and LAST_IP_ADDRESS.

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
1	1	PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	PE2
2	2	SEVERITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	1	PE2
3	3	SD_USERID	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Teddy	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
4	2	SD_STATUS_ CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Accepted	PE2
5	2	CONTACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Ted Jones	PE2
6	2	COMPANY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	BIGBANK	PE2
7	3	E_MAIL_ADDRESS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	teddy@ bigbank.com	PE2
8	3	PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	111-222-3333	PE2
9	3	CELL_PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	444-555-5555	PE2
10	2	SITE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Moorefield	PE2
11	2	SD_SITE_CATEGORY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Remote	PE2
12	2	DIVISION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	46	PE2
13	2	DEPARTMENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	VISA	PE2
14	2	OWNER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Alice	PE2
15	2	SD_SYSTEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Business Application	PE2
16	2	SD_COMPONENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Security	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
17	2	SD_ITEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Mortgage Application	PE2
18	2	SD_PRODUCT_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Business Application	PE2
19	2	SD_PROBLEM_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Client Specific	PE2
20	2	SD_CAUSE_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Fault	PE2
21	2	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Ted cannot login to the mortgage application	PE2
22	2	ABSTRACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Login to the mortgage application fails	PE2
23	2	OPEN_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	November 4th 9:42	PE2
24	2	CLOSE_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	November 4th 14:35	PE2
25	3	SD_USER_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	CONTACT	PE2
26	2	SD_ASSIGN_GROUP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Software	PE2
27	3	FIRST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Ted	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
28	3	LAST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Jones	PE2
29	3	EMPLOYEE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	217-45-9873	PE2
31	2	ASSIGNEE_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Marty	PE2
32	2	TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Call	PE2
33	4	CR_PRIORITY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	3	PE2
34	5	SD_USERID	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	LindaD	PE2
35	4	CONTACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Linda	PE2
37	4	COMPANY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	BIGBANK	PE2
38	5	E_MAIL_ADDRESS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	TheDirector@bigbank.com	PE2
39	5	PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	123-987-8888	PE2
40	5	CELL_PHONE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	123-596-6966	PE2
41	4	DIVISION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	ABC	PE2
42	4	DEPARTMENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	BVDA	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
43	4	SD_SYSTEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Application	PE2
44	4	SD_COMPONENT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Lotus Notes	PE2
45	4	SD_ITEM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Client	PE2
46	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	A1234	PE2
47	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	A2345	PE2
48	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	A3456	PE2
49	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	A4567	PE2
50	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	A5678	PE2
51	4	SD_ASSETS_AFFECTD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	A6789	PE2
52	4	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Upgrade all Lotus Notes clients from 4.6 to 5.0 for department BVDA	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
53	4	ABSTRACT	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Lotus Notes clients upgraded from 4.6 to 5.0	PE2
54	4	SD_RISK_LEVEL	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	2	PE2
55	4	CR_PLAN_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 17th 00:00:00	PE2
56	4	CR_ACT_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 17th 11:35:00	PE2
57	4	CR_PLAN_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 19th 00:00:00	PE2
58	4	CR_ACT_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 23rd 23:40	PE2
59	4	APPROVAL_TIMESTAP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 13th 11:35	PE2
60	4	CR_REQUEST_DATE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	November 12th 9:42	PE2
61	4	CR_COMPLETE_DATE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 23rd 23:40	PE2
62	4	CR_APP_ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	APPROVED	PE2
63	4	CR_APP_ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	APPROVED	PE2
64	4	CR_APP_ACTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	APPROVED	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
65	4	APPROVER_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Alice	PE2
66	4	APPROVER_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Mike	PE2
67	4	APPROVER_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	John	PE2
68	4	CR_COMPLETION_CD	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	1	PE2
69	4	OPEN_TIMESTAMP	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	November 12th 9:42	PE2
71	4	CR_BACKOUT_PLAN	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Switch back to Notes 4.6	PE2
72	4	SD_COORDINATOR_NM	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Jerry	PE2
73	4	CR_START_DELAY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	11 hours, 35 minutes	PE2
74	4	CR_END_DELAY	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	4 days, 23 hours, 40 minutes	PE2
75	5	SD_USER_TYPE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	REQUESTER	PE2
76	5	FIRST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Linda	PE2
77	5	LAST_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Jeffrey	PE2

CompAttr_ ID INTEGER	Comp_ ID INTEGER	AttrTyp_Cd CHAR (17)	CompAttr_Strt_DtTm TIMESTAMP	CompAttr_End_DtTm TIMESTAMP	CompAttr_ Val VARCHAR (254)	MSrc_Cd* CHAR (6)
78	5	EMPLOYEE_NUMBER	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	217-974-0000	PE2
80	4	ASSIGNEE_NAME	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Jimbob	PE2
81	4	CR_APP_STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Approved	PE2
82	4	CR_STATUS_CODE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	Open	PE2
83	6	CR_TASK_PHASE	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Update client	PE2
84	6	DESCRIPTION	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Update client machine	PE2
85	6	CR_PLAN_START	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	December 17th 00:00:00	PE2
86	6	CR_PLAN_END	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.00000	December 18th 00:00:00	PE2
87	6	CR_TASK_STATUS	2002-04-04-00.00.00.000000	9999-01-01-00.00.00.000000	Initial	PE2

* Note - Reserved. This column is not available in Tivoli Enterprise Data Warehouse, Version 1.1.

Component measurement

Measurement group type (table MGrpTyp)

MGrpTyp_Cd CHAR (6)	MGrpTyp_Nm VARCHAR (120)
GROUP	Aggregate Types or Group Functions

Measurement group (table MGrp)

MGrp_Cd CHAR (6)	MGrpTyp_ Cd CHAR (6)	MGrp_Parent_ Cd CHAR (6)	MGrp_Nm VARCHAR (120)
TOT_E	GROUP	NULL	Total Value Exists
INCID	GROUP	NULL	Incident Measurements
CHANGE	GROUP	NULL	Change Measurements
AVG_E	GROUP	NULL	Average Value Exists
MIN_E	GROUP	NULL	Minimum Value Exists
MAX_E	GROUP	NULL	Maximum Value Exits

Measurement group member (table MGrpMbr)

MGrp_Cd CHAR (6)	MGrpTyp_Cd CHAR (6)	MsmtTyp_ID INTEGER
TOT_E	GROUP	1-15,21,23,24
MIN_E	GROUP	16-20,22
MAX_E	GROUP	16-20,22
AVG_E	GROUP	16-20,22
CHANGE	GROUP	6-22,24
INCID	GROUP	1-5,23

Measurement unit category (table MUnitCat)

MUnitCat_Cd CHAR (6)	MUnitCat_Nm VARCHAR (120)
TM	Time Duration
QTY	Quantity
PRC	Percentage

Measurement unit (table MUnit)

MUnit_Cd CHAR (6)	MUnitCat_Cd CHAR (6)	Munit_Nm VARCHAR (120)
QTY	QTY	Quantity
Min	TM	Minutes
Hr	TM	Hours

Time summary (table TmSum)

TmSum_Cd CHAR	TmSum_Nm VARCHAR (120)
P	Point
H	Hour

Measurement source (table MSrc)

MSrc_Cd CHAR (6)	MSrc_Parent_Cd CHAR (6)	MSrc_Nm VARCHAR (120)
SD2	NULL	Peregrine ServiceCenter
SDESK1	NULL	Service Desk
MODEL1	NULL	Tivoli Common Data Model V1

Measurement type (table MsmtTyp)

MsmtTyp_ID INTEGER	MUnit_Cd CHAR (6)	MSrc_Cd CHAR (6)	MsmtTyp_Nm VARCHAR (120)	MsmtTyp_Ds VARCHAR (254)
1	Min	SDESK1	Incident state 1	* See Note Below
2	Min	SDESK1	Incident State 2	* See Note Below
3	Min	SDESK1	Incident State n	* See Note Below
4	QTY	SDESK1	Number of Opened Incidents	The number of incidents that have been opened
5	QTY	SDESK1	Number of Closed Incidents	The number of incidents that have been closed
6	Min	SDESK1	Change Request State 1	* See Note Below
7	Min	SDESK1	Change Request State 2	* See Note Below
8	Min	SDESK1	Change Request State n	* See Note Below
9	QTY	SDESK1	Number of Opened Change Requests	The number of change requests that have been opened
10	QTY	SDESK1	Number of Closed Change Requests	The number of change requests that have been closed
11	QTY	SDESK1	Number of Successful Change Requests	The number of requests that have been implemented successfully
12	QTY	SDESK1	Number of Successful Change Requests With Problems	The number of change requests that were implemented successfully with some problems
13	QTY	SDESK1	Number of Withdrawn Change Requests	The number of requests that were withdrawn
14	QTY	SDESK1	Number of Cancelled Change Requests	The number of requests that were cancelled

MsmtTyp_ID INTEGER	MUnit_Cd CHAR (6)	MSrc_Cd CHAR (6)	MsmtTyp_Nm VARCHAR (120)	MsmtTyp_Ds VARCHAR (254)
15	QTY	SDESK1	Number of Unsuccessful Change Requests	The number of requests that were unsuccessful
16	PRC	SDESK1	Percent of Successful Change Requests **	The percent that were implemented successfully
17	PRC	SDESK1	Percent of Successful Change Requests With Problems **	The percent that were implemented successfully with problems
18	PRC	SDESK1	Percent of Withdrawn Change Requests **	The percent that were withdrawn
19	PRC	SDESK1	Percent of Cancelled Change Requests **	The percent that were cancelled
20	PRC	SDESK1	Percent of Unsuccessful Change Requests **	The percent that were unsuccessful
21	QTY	SDESK1	Number of Emergency Change Requests	The number of emergency requests
22	PRC	SDESK1	Percent of Emergency Change Requests **	The percent that were emergency requests
23	QTY	SDESK1	Time to State	* See Note Below
24	QTY	SDESK1	Time to State	* See Note Below

* Note - The measurement type names and descriptions for the Incident and Change Requests are dynamic. The strings for the MsmtTyp_Nm and MsmtTyp_IDs are defined in an XML file that is unique for each environment. Therefore, if an environment supports an Incident State called Resolved, then Resolved would show up in the MsmtTyp_Nm, if defined in the XML file. The corresponding measurement description would also be added. Valid states for incidents and Change Requests vary from customer to customer. Rather defining a fixed set of states, we allow a customer to define the possible states.

** Note - Details about how this percentage is calculated is documented *Percentage measurement calculations* on page 102.

Percentage measurement calculations

Measurements that are percentages are calculated for the CHANGE_REQUEST, SERVICE_DESK, and SD_USER component types. These measurements are only available after the change request has been closed. For the CHANGE_REQUEST and SD_USER components, the percentage measurements are either 0 or 100% based. The reason for this is that at the CHANGE_REQUEST and SD_USER level the measurement is against a single Change request. Either the single change was an emergency change, or it was a non-emergency change. Therefore, the percentage at this level is always either 0% or 100% when the measurement is viewed at a single user or change request level.

For the SERVICE_DESK components, the percentage measurements represent the percentages for all closed changes that were made for that installation of the service desk. The sample for "Percent Withdrawn", below, shows how this measurement is calculated. For this example, 50 changes were closed between four and five PM. Of those 50 changes, 3 of the changes were withdrawn, 7 cancelled, 35 successful, 0 unsuccessful, and 5 were successful with errors.

Percent Withdrawn = (Number Withdrawn in that hour/ total number of changes closed for that hour)* 100.

For this example, Percent Withdrawn is 6%. 6 = (3/50)* 100.

Component measurement rule (table MsmtRul)

CompTyp_Cd CHAR (17)	MsmtTyp_ID INTEGER
INCIDENT	1-5, 23
CHANGE_REQUEST	6-22, 24
SERVICE_DESK	4, 5, 9-22
SD_USER	4, 5, 9-22, 23, 24

Measurement (table Msmt)

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
1	1	3	H	2002-11-04	09:00				1 + All other incidents opened in that hour.				PE2
2	1	4	H	2002-11-04	14:00				1 + All other incidents closed in that hour.				PE2
3	2	3	H	2002-11-04	9:00				1				PE2
4	2	4	H	2002-11-04	14:00				1				PE2
5	3	3	H	2002-11-04	9:00				1				PE2
6	3	4	H	2002-11-04	14:00				1				PE2
7	2	1	P	2002-11-04	9:42				0				PE2
87	2	1	P	2002-11-04	9:42				38				PE2
98	2	2	P	2002-11-04	10:20				0				PE2

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
109	2	2	P	2002-11-04	10:20				75				PE2
110	2	3	P	2002-11-04	11:35				0				PE2
121	2	3	P	2002-11-04	11:35				65				PE2
132	1	9	H	2002-11-12	9:00				1 + All other changes opened in that hour.				PE2
143	4	9	H	2002-11-12	9:00				1				PE2
154	5	9	H	2002-11-12	9:00				1				PE2
165	1	10	H	2002-12-23	23:00				1 + All other changes closed in that hour.				PE2
176	4	10	H	2002-12-23	23:00				1				PE2
187	5	10	H	2002-12-23	23:00				1				PE2

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
198	1	11	H	2002-12-23	23:00				1 + All other changes successful in that hour.				PE2
2019	4	11	H	2002-12-23	23:00				1				PE2
210	5	11	H	2002-12-23	23:00				1				PE2
221	1	16	H	2002-12-23	23:00	100	100	100					PE2
232	4	16	H	2002-12-23	23:00	100	100	100					PE2
243	5	16	H	2002-12-23	23:00	100	100	100					PE2
254	1	17	H	2002-12-23	23:00	0	0	0					PE2
265	4	17	H	2002-12-23	23:00	0	0	0					PE2
276	5	17	H	2002-12-23	23:00	0	0	0					PE2
287	1	18	H	2002-12-23	23:00	0	0	0					PE2
298	4	18	H	2002-12-23	23:00	0	0	0					PE2
3029	5	18	H	2002-12-23	23:00	0	0	0					PE2

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
310	1	19	H	2002-12-23	23:00	0	0	0					PE2
321	4	19	H	2002-12-23	23:00	0	0	0					PE2
332	5	19	H	2002-12-23	23:00	0	0	0					PE2
343	1	20	H	2002-12-23	23:00	0	0	0					PE2
354	4	20	H	2002-12-23	23:00	0	0	0					PE2
365	5	20	H	2002-12-23	23:00	0	0	0					PE2
376	1	21	H	2002-12-23	23:00				0				PE2
387	4	21	H	2002-12-23	23:00				0				PE2
398	5	21	H	2002-12-23	23:00				0				PE2
4039	1	22	H	2002-12-23	23:00	0	0	0					PE2
410	4	22	H	2002-12-23	23:00	0	0	0					PE2
421	5	22	H	2002-12-23	23:00	0	0	0					PE2

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
432	1	12	H	2002-12-23	23:00				0 + All other changes successful with problems in that hour.				PE2
443	1	13	H	2002-12-23	23:00				0 + All other changes withdrawn in that hour.				PE2
454	1	14	H	2002-12-23	23:00				0 + All other changes cancelled in that hour.				PE2
465	1	15	H	2002-12-23	23:00				0 + All other changes unsuccessful in that hour.				PE2
476	4	6	P	2002-11-12	9:42				0				PE2
487	4	6	P	2002-11-12	9:42				47558				PE2

Msmt_ ID BIGINT	Comp_ ID INTEGER	Msmt Typ_ID INTEGER	Tm Sum_ Cd CHAR	Msmt_ Strt_ Dt DATE	Msmt_ Strt_ Tm TIME	Msmt_ Min_ Val FLOAT	Msmt_ Max_ Val FLOAT	Msmt_ Avg_ Val FLOAT	Msmt_ Tot_ Val FLOAT	Msmt_ Smpl_ Cnt INTEGER	Msmt_ Err_ Cnt INTEGER	Msmt_ StdDev _Val* DOUBLE	Msrc_ Cd* CHAR (6)
498	4	7	P	2002-12-09	10:20				0				PE2
5049	4	7	P	2002-12-09	10:20				5775				PE2
510	4	8	P	2002-12-09	11:35				0				PE2
521	4	8	P	2002-12-09	11:35				5750				PE2

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