Store-to-Oracle Data Flow Architecture

Store Services

Printed 5/15/2014

Purpose

This document explains the files that are sent from the stores to corporate, and what processing is performed on them, to the point where they are loaded into the Oracle database and other locations within the corporate file servers. The goal is to document the data files, processes, and end-result of store data loading for the purpose of optimization and maintenance.

Audience

This is intended to serve business analysts and programmers. However, the high-level overviews at each chapter may also be of interest to managers and non-technical readers.

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Hollywood Network Overview

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Overview

This section describes the physical components involved with generating, moving, and processing data related to financial, customer and inventory.

Store Processing and Data Flow

Figure 1 depicts the process of receiving titles, inventory, and transactions at the store. During closeout, business data is transmitted to the Store Support Center (SSC) for batch processing and reporting.

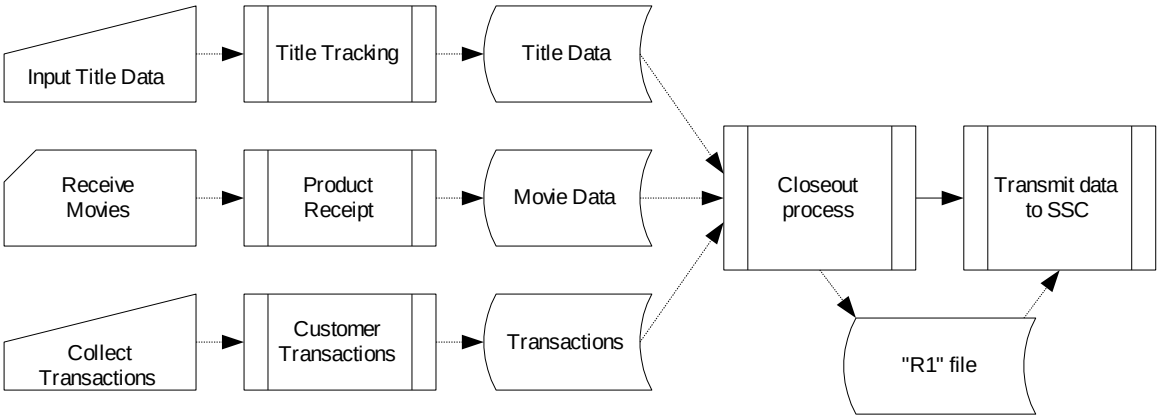

Figure 1. Store Processing Overview

At closeout, the data files are compressed and merged into a transmission file, which is then sent to Corporate.

Store-to-Corporate Communication

The Store-to-Corporate physical model is shown in Figure 2. The key process in moving the data to Corporate is the XCELLENET processors.

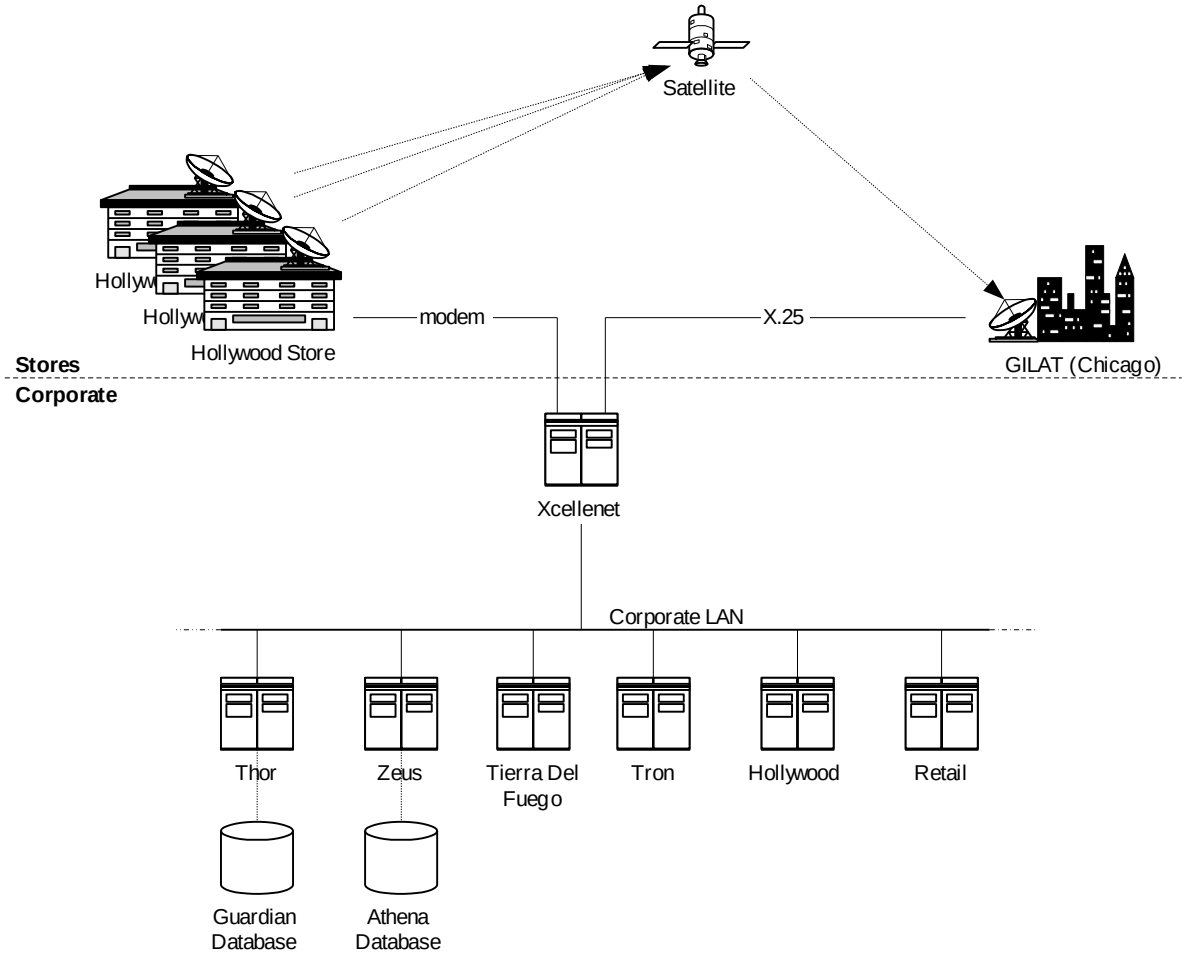

Figure 2. Communications from Store to Corporate

Figure 2 shows the paths used to move data between stores and Corporate. Communication typically occurs at closeout (2-3am), and via the satellite path. Modem communication is used when the satellite path fails.

Corporate Processing and Data Flow

Figure 3 shows the batch processing which retrieves the files from the stores, loads them into the corporate databases, and generates revenue, operations and financial reports.

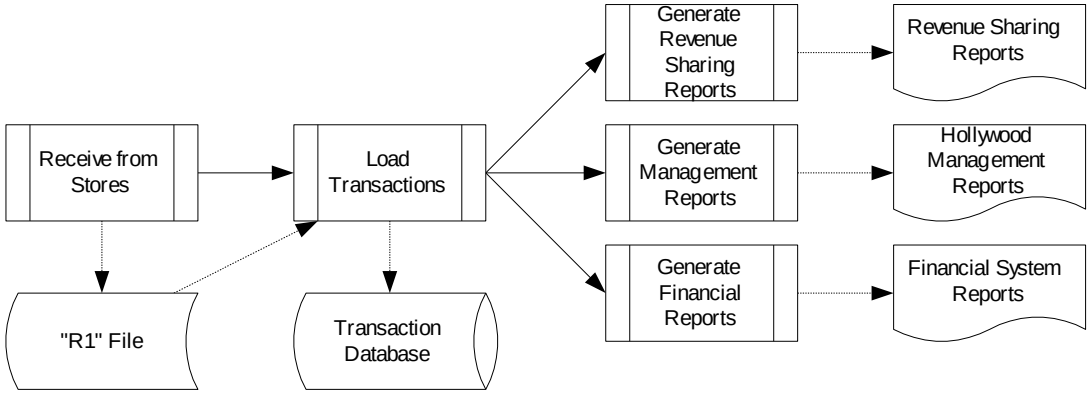

Figure 3. Corporate Processing Overview

Files Received from the Stores

Figure 4 shows how the R1 transmission file is received at the XCELLENET corporate server, split into the component files, which then are moved and/or split for further processing on different servers.

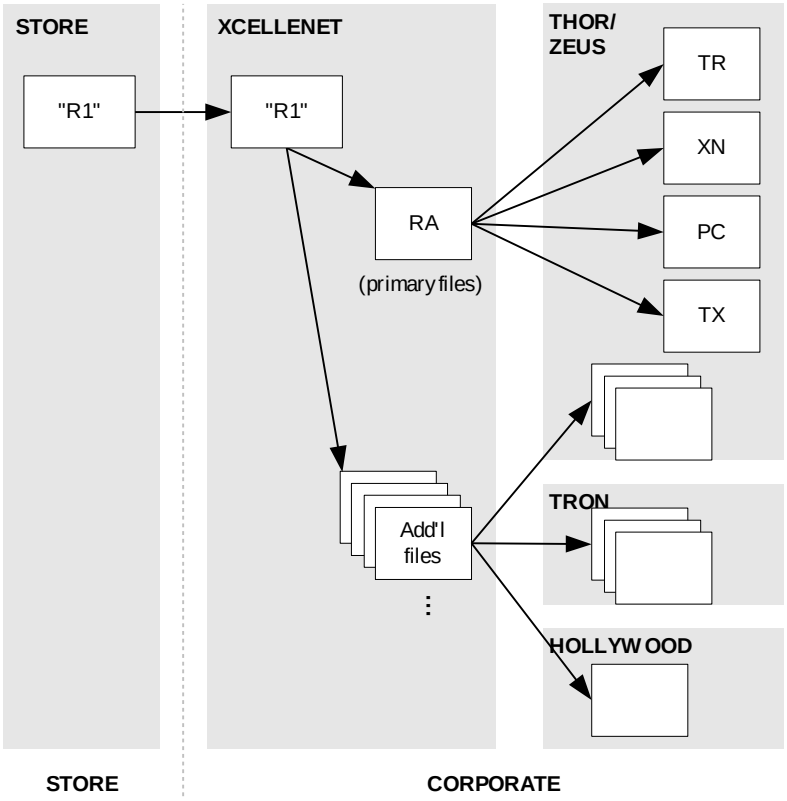

Figure 4. File Processing Overview

"R1" is the transmission container file. One is received from each store. These contain compressed copies of files which are moved and processed further upstream. The content of R1 is the transactions, customers, and additional store/employee info for the day's business.

The closeout process at each store assembles several files to create a compressed transmission file, called R1. This file typically is between 75k-500k in length.

Store Processing

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Overview

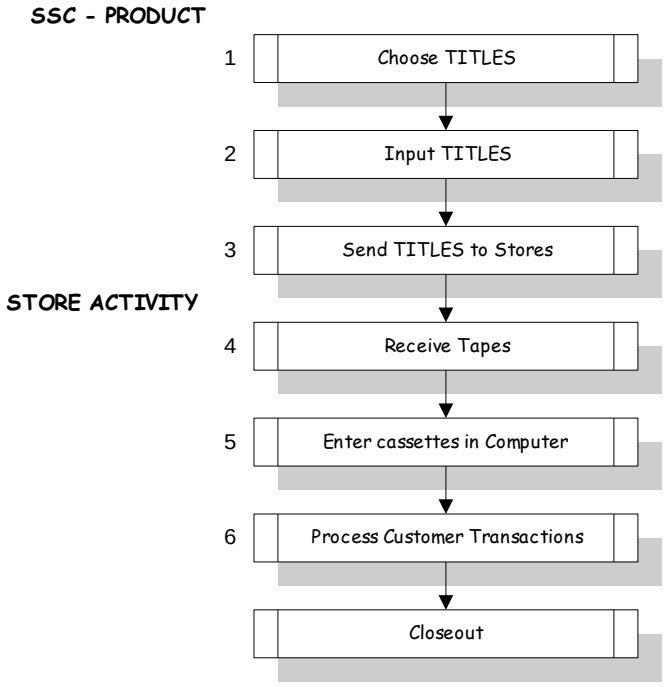

Figure 5. Store Activities Overview

Transaction Processing

Types of transactions:

- Rentals – The MAINTRAN program writes to the following files: TRANS.DAT, MOVIES.DAT, NHIST.DAT
- Returns
- Sales
- Refunds/Exchanges

- Edit Transactions
- Other

Transactions types are associated with single-character codes. This is listed in “TR – Transaction Info,” on page 83.

Files

The files and their content include:

- TRANS.DAT – Transaction detail
- MOVIE.DAT – Movie titles
- ACCSRY.DAT – Accessories on-hand
- MEMBER.DAT – Customers
- TRANSFER.DAT – PO Receiving transfers (previously used to track *all* transfers).
- XFERHIST.DAT – Transfer history – used to track all transfer activities.
- Sales Summaries –

Additional information on these files is in Appendix A. File Formats at the Store, on page 57.

Closeout/Transmission Processing

Each store provides daily business activity data to Corporate. This is compiled at a point called closeout, and generated as a set of data files.

Several processes run during closeout that converts the daily activity data into a format useful at Corporate:

- TT2TR – Copies transaction data from TRANS.DAT into the TR file (store transactions) and TX file (rental returns).
- TRNUPD z
- TRNRPT
- PCUPDATE – Copies inventory data from MOVIE.DAT, MEMBER.DAT, ACCSRY.DAT, TRANSFER.DAT, and XFERHIST.DAT into the PC file.
- XFERPACK
- ZERONR

Data transmission is initiated with the closeout process. This section is concerned with the transmission of the data generated by TT2TR and other data-generating processes that run during closeout.

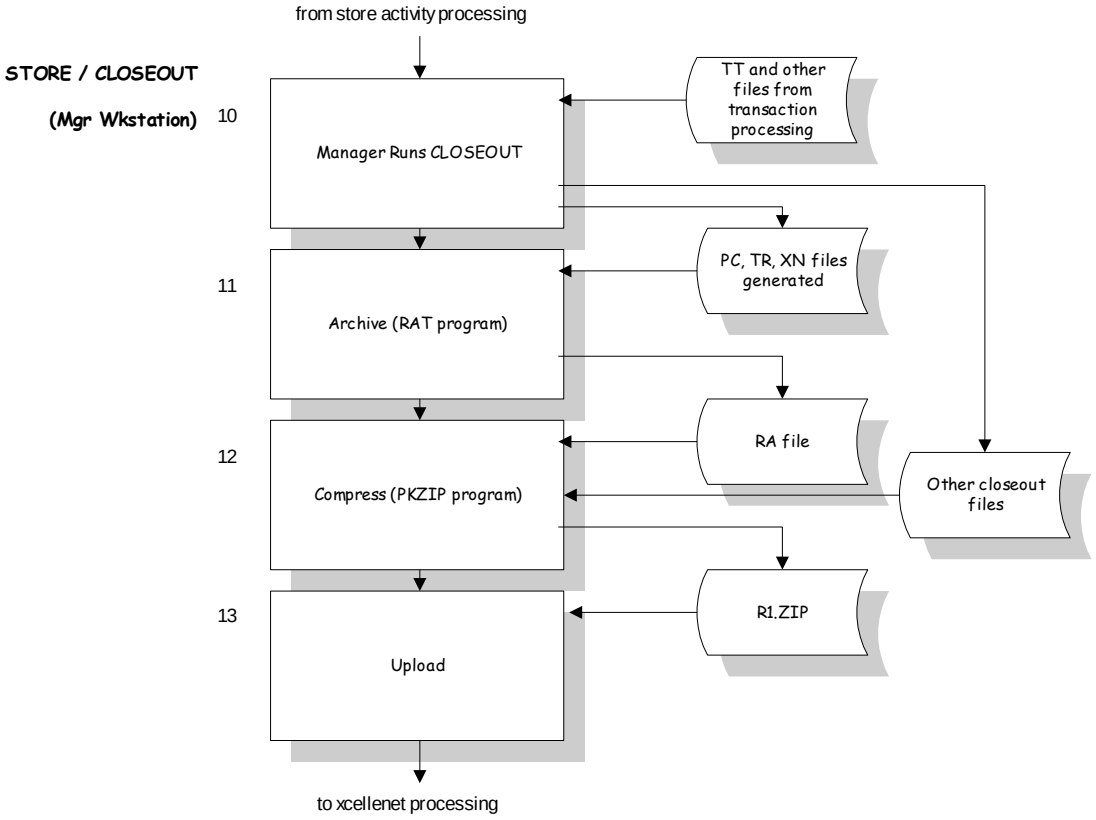

Figure 6. Closeout process

The store manager initiates closeout through the Hollywood menu. Part of the closeout process includes the following batch programs:

- HLYW.MNU
- EOD.BAT
- COMM.BAT
- EOD2.BAT

HLYW.MNU

When closeout is initiated, the transaction (TR) and the extra info files (XN) are created. The file name is appended with the store number and Julian date.

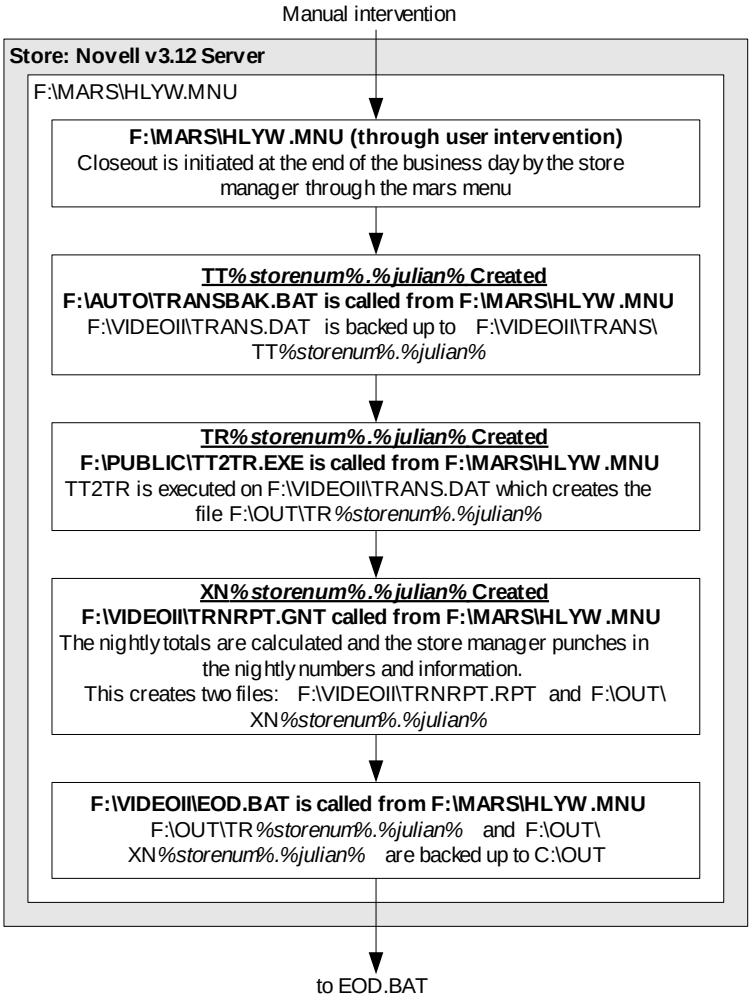

Figure 7. Store Process Summary: HLYW.MNU

EOD.BAT

The customer info (PC), PCUPDATE, and RA files are created. The TR, XN, and PC files are zipped into the R1 transmission file.

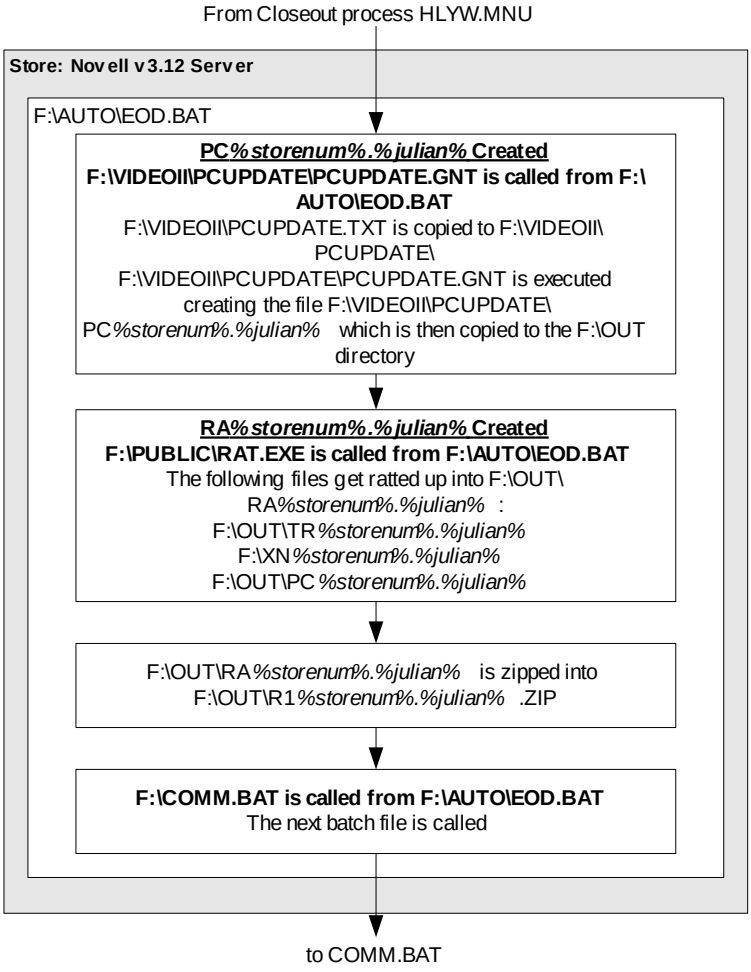

Figure 8. Store Process Summary: EOD.BAT

COMM.BAT

The R1 file is sent via the primary connection (VSAT satellite). When sent, it arrives as R1*%storenum%*.ZIP. If 65 attempts to connect using VSAT fail, the file is sent via the secondary connection (modem line). If 120 attempts on the modem line fail, COMM.BAT exits and user intervention is required to transmit the file. This is done by RESEND.BAT.

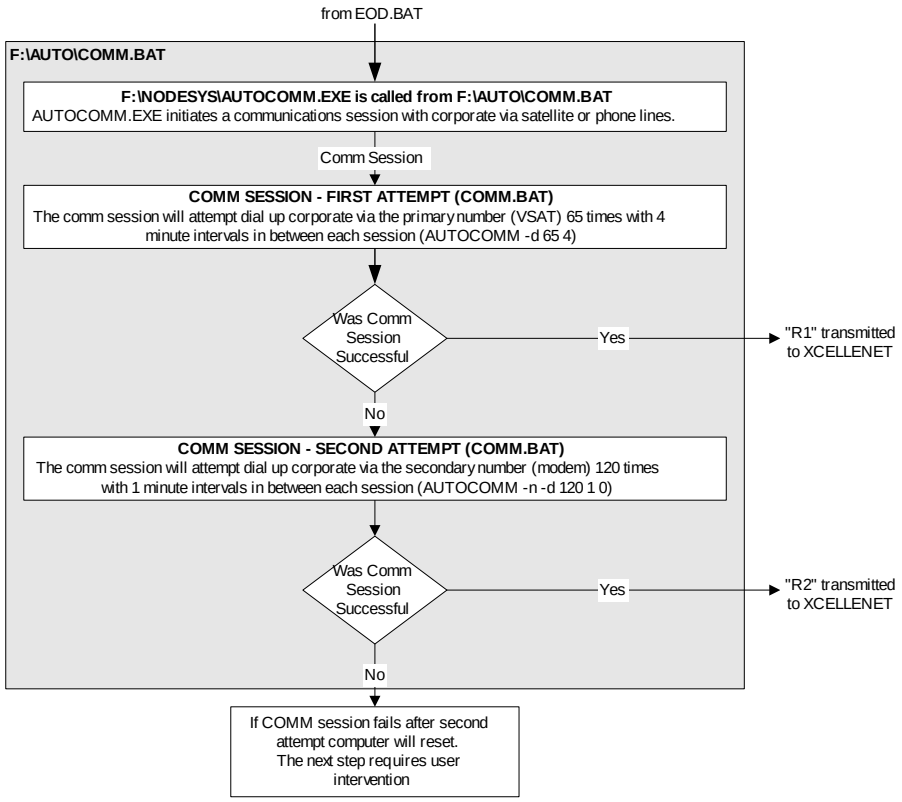

Figure 9. Store Process Summary: COMM.BAT

EOD2.BAT

This program produces reports of the success of the transmission to Corporate.

RESEND.BAT

RESEND.BAT is not part of the automated closeout process, but is activated manually when user intervention is required. This is done by the store personnel or tech support. This batch file contacts Corporate using the primary connection. When sent, the file arrives as `R2%storenum%.ZIP`. If 65 attempts fail, it switches to the secondary connection. If 120 attempts fail, `RESEND.BAT` exits.

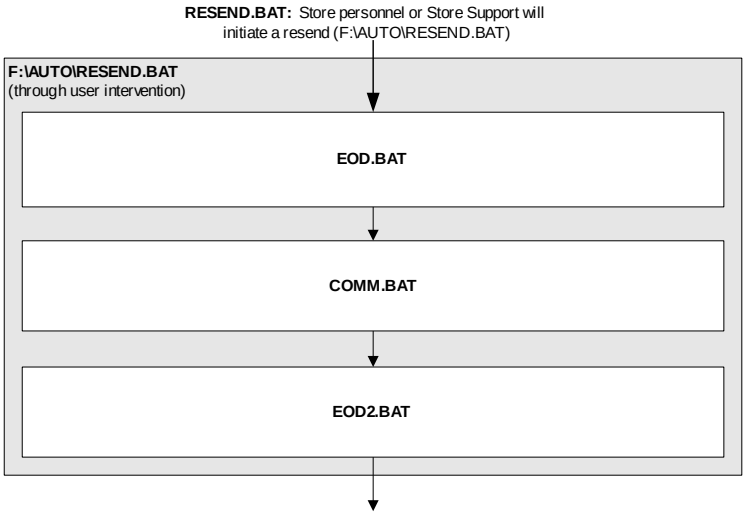

Figure 10. Store Process Summary: `RESEND.BAT`

If `RESEND.BAT` fails to send the file, it is left in the `\OUT` directory for manual transmission. When the file arrives at Corporate using a manual process, the file arrives as `R3%storenum%.ZIP`.

Files Sent to Corporate

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Overview

Files are transmitted from the stores to Corporate every morning between 2am and 5am, Pacific Time, depending on the time zone of the store, and how many attempts were made to send the file:

- **R1***%store_num%***.ZIP** – Contains closeout files (1st transmission attempt)
- **R2***%store_num%***.ZIP** – Contains closeout files (received only if 1st transmission attempt does not work)
- **R3***%store_num%***.ZIP** – Contains closeout files (received only if 1st and 2nd transmission attempts do not work). R3 is send when the `RESEND.BAT` script is run.

All of the above files are transmitted from the store's file server directory `F:\OUT\`, and are received on the XCELLENET processor (see page 23) in the directory `\\XCELLENET_PDC\XNET_E\IN\NODE\`*%store_num%*`\IN\`.

File fragments from partial transmissions are automatically deleted from the `IN` directory when a subsequent attempt is made to send the file.

An R1/R2/R3 file may not be present for one or more stores due to the following reasons:

- Server down
- Close-out process failure
- Transmission problems

If any of these problems occur, the tech support staff must restore the server and/or communications to proper operation, and manually upload the file to Corporate.

R1/R2/R3 Files

The files R1, R2 and R3 are nearly identical transmission files. The number designates what attempt resulted in the intact file arriving at corporate. Only one of the three will arrive at corporate per store. The normal size is between 400k and 800k, depending on the activity at the store.

The R1 and R3 file contains the RA file, which in turn contains the TR, XN, and PC files (shown in Figure 11. (Due to the communications logic at the store, the RA component will never appear in the R2 transmission file.) However, many other files are extracted from R1/R2/R3.

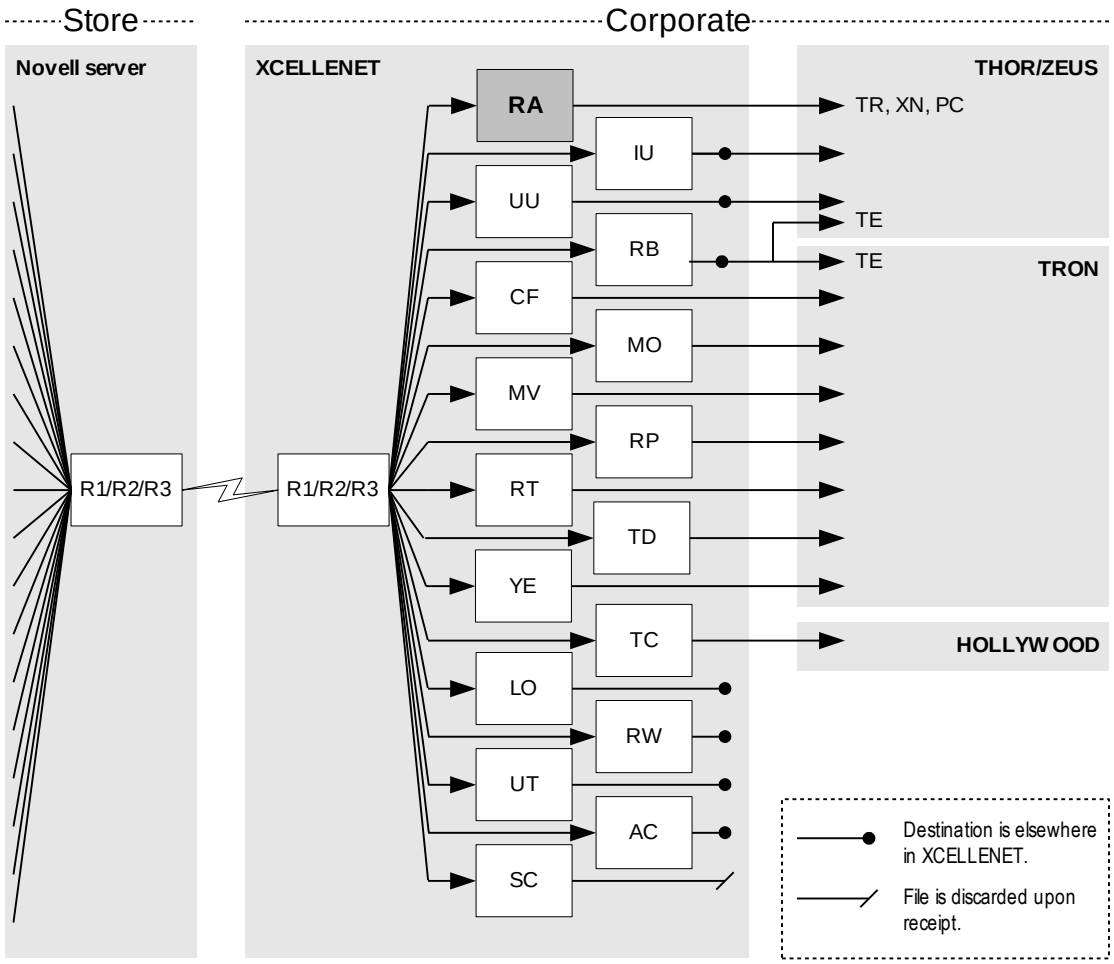

Figure 11. Data Flow via R1/R2/R3 transmission file

AC – List of active members
CF – Store configuration
IU – Item update
LO – Low disk space marker
MO – Movie inventory posting report
MV – Movie inventory data
RA – Contains TR, XN, PC files
RB – Contains TE file
RP – Closeout report
RT – double-scanned check-in rental items
RW – Remoteware communications log
SC – Employee schedule information
TC – TAS trace file
TD – Timecard edits
UT – Tax information
UU – UPC update
YE – Year-end financials

File	Content	Purpose	Destination	Notes	"Owner"
AC		List of active members	Deleted upon upload to \\XCELLENET	Store filename: ACTMEM.TXT renamed to AC*%store_num%*.TXT	??
CF		Store config file from \VIDEOII\	\\TRON\V1\LP\CONFIG\	Store filename: CONFIG	Mike Lamotte
IA		Accessory Inventory file	\\TRON\V1\ARCHIVE\IA\yyyymmdd\	Store filename: ACCRECO.GNT	Michael Nearman
IM		Movie Inventory file	\\TRON\V1\ARCHIVE\IM\yyyymmdd\	Store filename: NEWINV.GNT	Michael Nearman
IU		Item update file	\\XCELLENET_PDC\XNET_E\IN\IU, ZEUS:/u78/transact/updates/IU/	store filename: IU*%store_num%*.2CP	Travis Naganuma
LO		Low disk space marker file	??		Tom Naganuma
MK		Collections file	\\XCELLENET_PDC\XNET_E\IN\NODE\ *%store_num%*\IN\	Probably will go away	?
MO		Movie inventory posting report. Records status changes	\\TRON\V1\LP\MOVIEREC_P\	Store filename: MOVREC-P.RPT	Mike Lamotte
MV		Movie inventory data file.	\\TRON\V1\IN\LP\MVINAUD\	Store filename: MVINVAUD.DAT	Mike Lamotte
PB		Phone book file	Deleted on XCELLENET?		Casey Viecelli
RA	TR	Transaction info	THOR:/execlenet/ transact/ ZEUS:/u78/transact/ \\TRON\V1\VIDEO2\TRANS\		
	PC	Customer info	THOR:/execlenet/ transact/ ZEUS:/u78/transact/		
	XN	Extra info	THOR:/execlenet/ transact/ ZEUS:/u78/transact/		
RB	TE	Payroll Edits (E.g., empl. address change, promotion)	THOR:/excelenet/ta ZEUS:/u78/ta \\XCELLENET_PDC\XNET_E\IN\RB\		Todd Silbernagel
RP		Closeout report	\\TRON\V1\IN\REPRINTS*yyyymmm*[1]\	Store filename: TRNRPT.RPT	Mike Lamotte
RT		Contains a record of non-rented items that were scanned at the check-in, and marked as already checked-in	\\TRON\V1\LP\RTFILES\		Mike Lamotte or Kurk Spendlove
RW%store_num%**.LOG**		Remoteware communications log file	\\XCELLENET_PDC\XNET_DATA\LOGS\ RW%store_num%.LOG	Store filename: RWCOMM.LOG	Tom Naganuma
SC		Employee schedule information	Deleted upon upload to \\XCELLENET	Store filename: SCHED.TXT	Todd Silbernagel
TC		Used for troubleshooting the Tender Authorization Software (TAS) trace file	\\HOLLYWOOD\VOL1\HOME\TAS\ STORES*%store_num%*\	Store filename: TAS.TRC	Tom Cahill
TD		Timecard Edits	\\TRON\V1\TA\TE\	Punch file for hourly punches feeds to payroll.	Curtis Poach
TX		Transaction info	\\TRON\V1\ARCHIVE\TX\yyyymmdd		Michael Nearman

File	Content	Purpose	Destination	Notes	"Owner"
UT		Tax information	\\XCELLENET_PDC\XNET_E\UTILITY	Store filename: UTILITY.DAT	Michael Numan
UU		UPC update file	\\XCELLENET_PDC\XNET_E\IN\IU, ZEUS:/u78/transact/updates/UU/		Product Management
WS		Workstation configuration	\\TRON\V1\HOST\CPU\		
YE		Year-end inventory report	\\TRON\V1\LP\YEAREND\	Store filename: YEAREND.RPT Manually uploaded after each year-end processing cycle.	Mike Lamotte or Tim Castagnola

Actual file names in the left-most column (except for RW) are appended with %*store_num***%.%***julian*%.

[1] *yyyy* = year,
mmm = 3-letter month abbreviation

Table 1. Files Extracted from R1/R2/R3 on XCELLENET

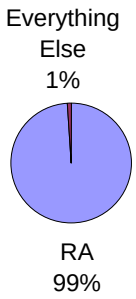

Figure 12. R1 Components Relative Size

Of all the files in R1/R2/R3, typically >98% of the space is occupied by RA.

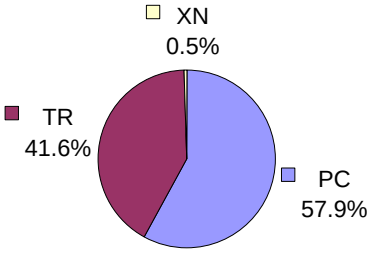

Figure 13. RA Components Relative Size

Within RA, >98% of the space is occupied by the TR and PC components.

XCELLENET

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Overview

XCELLENET is the communications hub for data transmission to and from the stores. Toward the end of the closeout process, the store contacts XCELLENET to initiate the data upload.

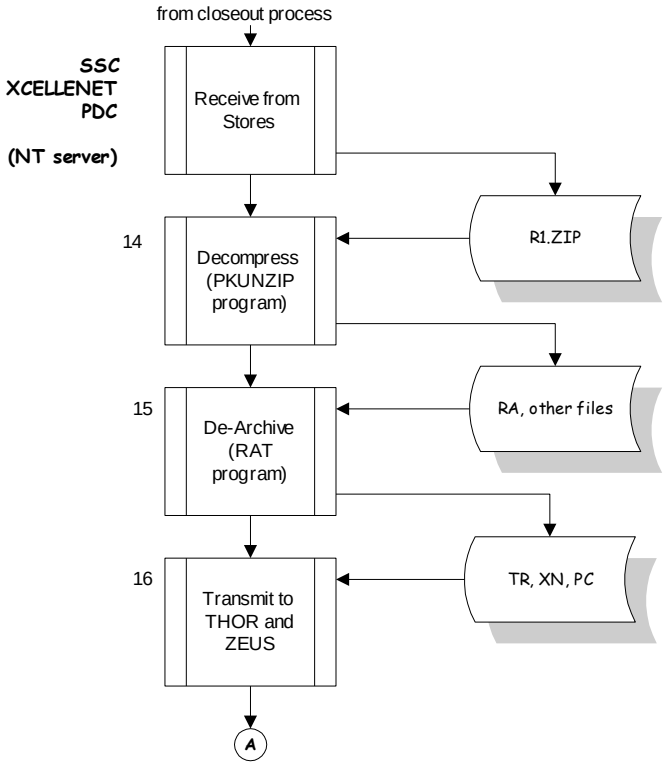

Figure 14. XCELLENET processing

XCELLENET consists of two clusters of processors that are responsible for communications to the network of retail stores. The configuration is shown in Figure 15.

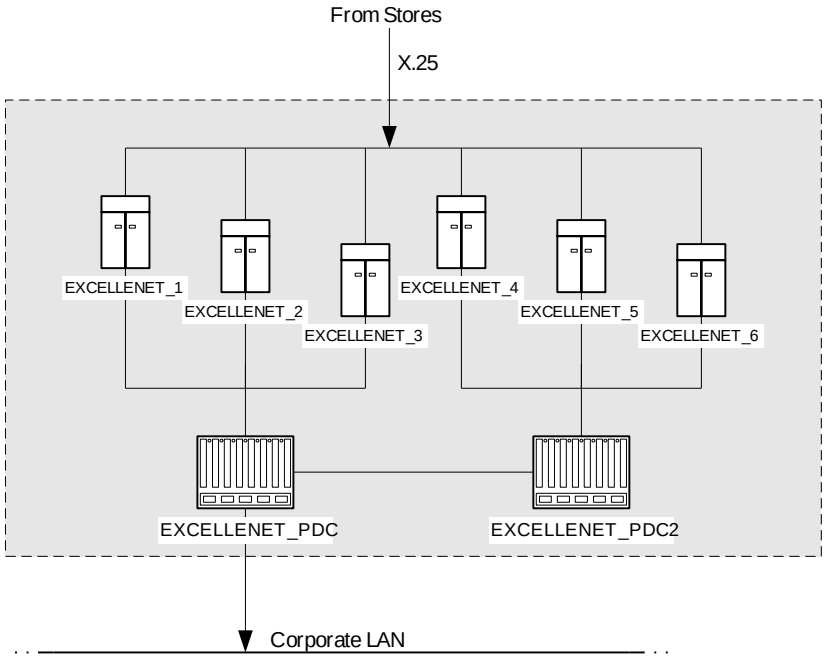

Figure 15. XCELLENET Overview

1. A store contacts XCELLENET at Corporate. XCELLENET takes over the data transmission process and uploads the R1 file. The transmitted file sent from each store is a ZIP archive or a "file package."
2. When the file transmission is completed, XCELLENET splits R1 into its component files.
3. RA is split into component files on THOR and ZEUS.
4. Additional R1 component files are delivered from XCELLENET to THOR, ZEUS, TRON, HOLLYWOOD and RETAIL.
5. A backup copy of R1 is stored on XCELLENET for 7 days.
6. UNIX Cron processes that run on THOR and ZEUS parse the incoming files and build SQL load files.
7. Data from the previous day's store transactions are available on Guardian and Athena databases at 10am the following day.

XCELLENET Processing

Overview

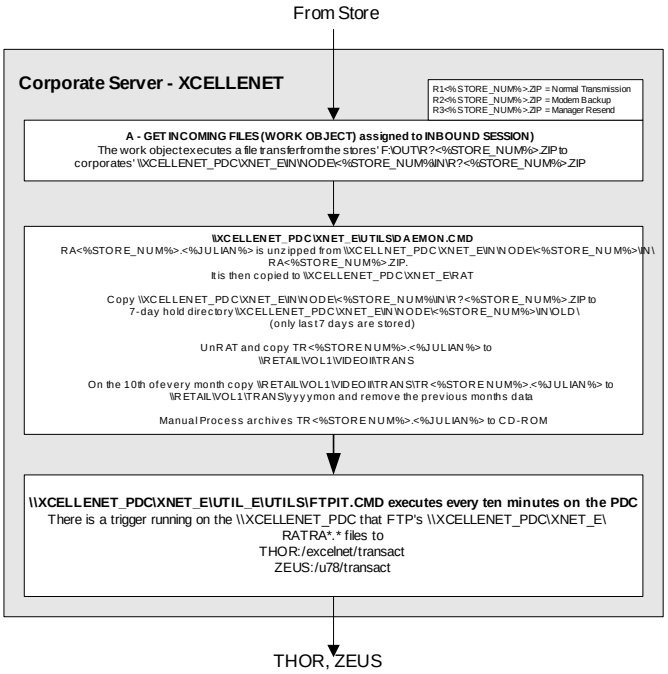

Figure 16. XCELLENET Processing Flow

XCELLENET Processes

Process Name/Location: "`A - GET INCOMING FILES`" (XCELLENET work object)

Process: Pull files from the store.

Inputs: `R1/R2/R3`

Outputs: `\\XCELLENET_PDC\XNET_E\IN\NODE\`*`%store_num%`*`\IN`

Dependencies:

Subordinate Processes: `DAEMON.CMD`

Trigger: Store signals that files are ready to be uploaded

Process Name/Location: \XNET_E\UTILS\DAEMON.CMD

Process:
Unzip the RA file.
Move component files to the RAT directory and to a temp directory.
Delete any file in the archive directory that is more than 7 days old.
Move MV file to \\TRON\V1\LP\MVINVAUD\
Move RP file to \\TRON\V1\IN\REPRINTS\YYYMM\
Move RT file to \\TRON\V1\LP\RTFILES\
Move RWNCOMM.LOG file to
\\XCELLENET_PDC\XNET_DATA\LOGS\RW*%store_num%*.LOG
Move T file to \\XCELLENET_PDC\XNET_E\IN\NODE*%store_num%*\IN\
Move TC file to \\HOLLYWOOD\VOL1\HOME\TAS\STORES*%store_num%*\
Move TD file to \\TRON\V1\TA\TD\
Move TE file to \\TRON\V1\TA\TE\
Move UT file to \\XCELLENET_PDC\XNET_E\UTILITY\
Move WS file to \\TRON\V1\HOST\CPU\
Move YE file to \\TRON\V1\LP\YEAREND\

Inputs:. RA*%store_num%.%julian%* file in directory
\\XCELLENET_PDC\XNET_E\IN\NODE*%store_num%*\IN\

Outputs: RA*%store_num%.%julian%* is copied to archive directory \\XCELLENET_PDC\XNET_E\IN\NODE*%store_num%*\IN\OLD, and to temp directory \\XCELLENET_PDC\XNET_E\RAT

Dependencies:

Subordinate Processes:

Trigger: Called from "A - GET INCOMING FILES"

Process Name/Location: \XNET_E\UTILS\FTPIT.CMD

Process: Copy RA file to THOR and ZEUS

Inputs:. \\XCELLENET_PDC\XNET_E\RAT\RA*%store_num%.%julian%*

Outputs: THOR:/excelenet/transact/RA*%store_num%.%julian%*,
ZEUS:/u78/transact/RA*%store_num%.%julian%*

Dependencies:

Subordinate Processes:

Trigger: cron; runs every 10 minutes.

Process Name/Location: "**P - ARCHIVE RAT FILES**"

Process: Copy RA files to archive directory. Copy RA file to RETAIL

Inputs: RA file

Outputs: RA file moved to: \\XCELLENET_PDC\XNET_E\RAT*%yymmdd%*\RA*%store_num%.%julian%*. TR file moved to \\RETAIL\VOL1\VIDEO2\TRANS\ directory.

Dependencies:

Subordinate Processes:

Trigger: Cron job, scheduled to run at: 5am, 7am, 8am, 9am, 11am, 1pm, 3pm, 5pm, 7pm.

Process Name/Location: "**P - FTP RB AND UL FILES**"

Process: copy the RB file to THOR and ZEUS

Inputs: \\XCELLENET_PDC\XNET_E\IN\RB\RB*%store_num%.%julian%*

Outputs: THOR:/excelenet/ta/RB*%store_num%.%julian%*

ZEUS:/u78/ta/RB*%store_num%.%julian%*

Dependencies:

Subordinate Processes:

Trigger: Cron job, scheduled to run at: 5am, 7am, 8am, 9am, 11am, 1pm, 3pm, 5pm, 7pm. Program looks for the existence of RB files in this directory.

Other Related Activities on XCELLENET

The TR files are archived from XCELLENET onto a CD-ROM each month. The purpose is to provide a quick access method to historical information that is needed from time to time. The process is manual, and performed monthly. Responsible area is Computer Operations, Joan Klein.

The MV file is archived from XCELLENET to \\TRON\V1\IN\REPRINTS\yyyymmm

HOLLYWOOD

The following file arrives at HOLLYWOOD from XCELLENET:

- TC – Tender Authorization Software (TAS) trace file. This file comes from `\tas\tas.trc` at the store's file server.

TRON

The following files arrive at TRON from XCELLENET:

- CF – Store configuration file (CONFIG). It is manually reviewed by Loss Prevention. There are no automated processes that are dependent on the presence or content of this file. This file currently comes in every day, but is only needed once or twice a month.
- MO – Movie inventory posting report. It is manually reviewed by Loss Prevention. There are no automated processes that are dependent on the presence or content of this file.
- MV – Movie inventory data file. It is manually reviewed by Loss Prevention. There are no automated processes that are dependent on the presence or content of this file.
- RT – This file contains a record of non-rented items that were scanned at the check-in, and marked as already checked-in. It is manually reviewed by Loss Prevention. There are no automated processes that are dependent on the presence or content of this file. This particular file has no use, but it is created directly from the MAINTRAN software at the stores on a daily basis. When an employee scans into the return screen, a movie that is already checked in, a record is spit out the F:\OUT\RT%store_num%.%julian% file. The record contains the movie ID of the scanned in movie.
- TD – Timecard punch file.
- TE – Payroll edits.
- TR – transaction file. When RA is extracted from the R1/R2/R3 file, a copy of the TR "transaction information" file (from RA) is copied to the \VOL1\VIDEO2\TRANS\ directory on RETAIL from XCELLENET.
- WS – Workstation configuration.
- YE – Year-end inventory report. This file is received twice per year and is manually reviewed by Loss Prevention. There are no automated processes that are dependent on the presence or content of this file.

TR Processing

In This Chapter…

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TR Processing 34
Data Model 37
Table Heading 37
TR Table Descriptions 37

Overview

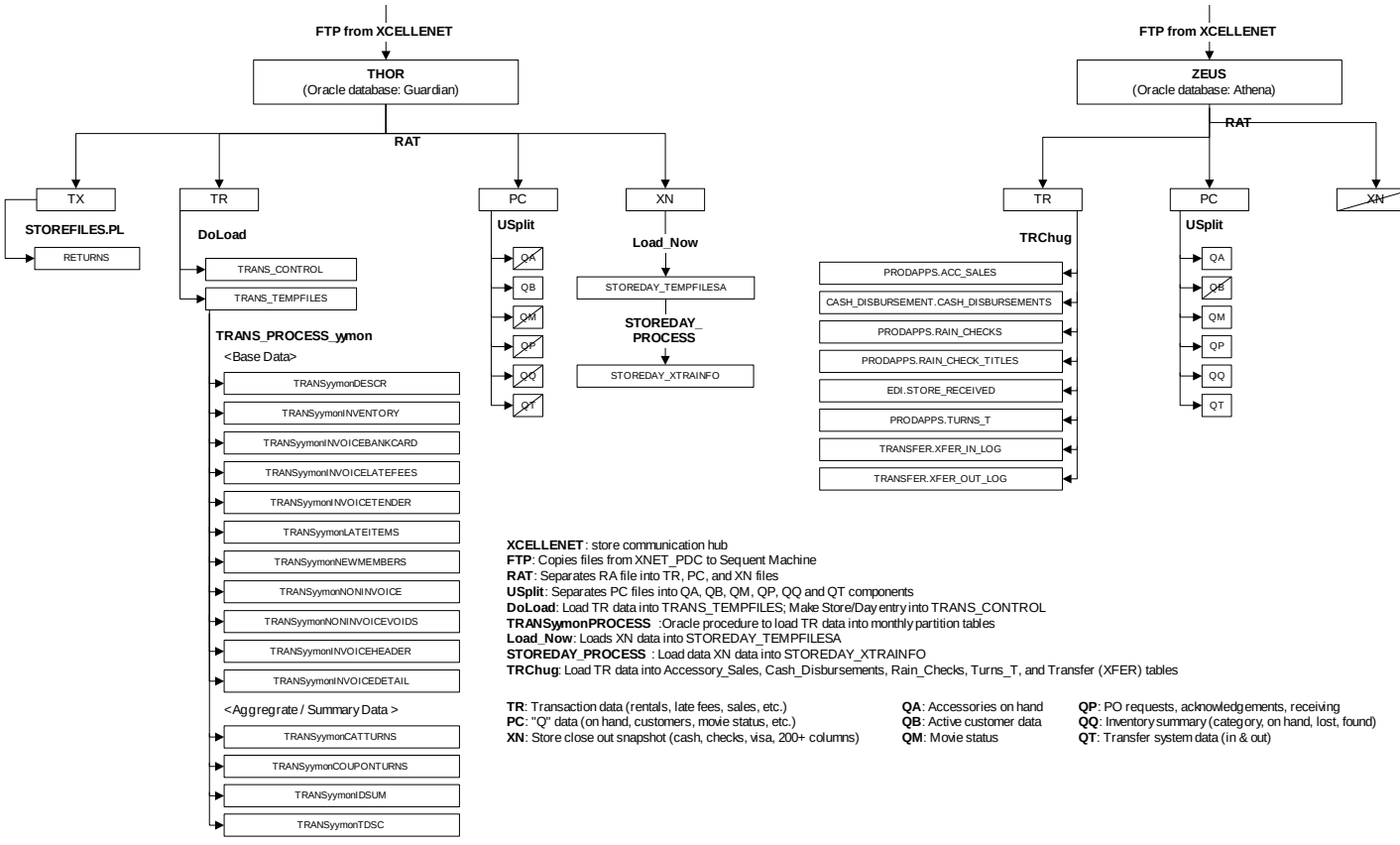

Figure 17. THOR/ZEUS Data Flow, high level

Transaction records are passed to Oracle database platforms THOR and ZEUS once they arrive at Corporate. These systems simultaneously receive an identical copy of RA from each store. Both processors then use RAT to extract TR, TX,

PC, and XN files from RA. From that point, their processes diverge in order to extract different sets of data for differing reports and other purposes.

TR Processing

- TR records are lumped together with all other records transmitted nightly from the stores including, TDs, TEs, TRs, etc. These are input through a flat file (referred to as a "RAT file").
- Input into the table `TRANS_TEMPFILES` (A and B) which is an image of what is received from the stores.
- Contents include every line item representing activities at each store. There is a line item for each individual action during a customer transaction; i.e., rental of one or more movies, cash tendered, coupon surrender. Each of these creates a TR record. Note that a header record is created for each invoice with as many detail records as needed to describe the entire transaction.
- Various columns in the `TRANS_TEMPFILES` table include codes that mean different things depending on the content of other columns. In addition, there is an "expansion" column that gets overwritten depending on the kind of transaction (as well as getting overwritten more than once during the processing of a given transaction). Therefore, the contents of this expansion field represents the *last* overwrite which occurred at the store.
- Content of the flat file is loaded into the `TRANS_TEMPFILES` (A or B) and from there, data is extracted into the various database tables (normalization) shown in the accompanying data model.
- The volume of data is something on the order of 500,000 transactions per day. Therefore, the data is broken out by month (as shown by the table names in the data model, Figure 29). The data is also broken out this way in anticipation of moving to Oracle, and the use of partitioned tables available in that database model.
- Everything hinges on the concept of a "store-day key." The store-day key is a sequential number that uniquely identifies this file from others of different days and of different stores. It is used to represent a store and a particular day. The store-day key is used to tie all the other tables together.
- Transaction code is used to identify such things as, rental, sell-through, late fees, coupons, etc. There is a cross-reference table called `TRANS_CODETYPES` where codes are described. New codes come from stores without notification to the Financials Group. See the early TR data model for notes regarding these codes (NOTE: This data model should be used for reference only for it is only valid from a conceptual point of view.)
  - An invoice is defined as any individual customer transaction at a store. This information is recorded in the following tables:
  - `TRANS`*`yymon`*`_INVOICEHEADER`
  - `TRANS`*`yymon`*`_DESCR`
  - `TRANS`*`yymon`*`_INVOICETENDER`

  - TRANS*yymon*_INVOICELATEFEES
  - TRANS*yymon*_INVOICEBANKCARD
  - TRANS*yymon*_INVOICEDETAIL
- The TRANS*yymon*_TDSC table is defined as: Type, Department, Sub-Department, and Category.
- A TIKEY applies to every "title." There are many "copies" of every title. A unique "ID" identifies copies.
- The TRANS*yymon*_DESCR table contains one non-key attribute, DESCRIPTION which contains a store-entered description of the transaction which identifies what was sold (or rented). Often stores sell (or maybe rent?) items that the Store Support Center does not recognize. Such items are described in this description column to aid in reconciliation.
- There are numerous types of invoice transactions brought in from the stores among which are:
  - Customer transactions (discussed above)
  - Non-invoice voids (such as late fees)
  - Inventory count
  - Other information not relevant to the Financials Group
- Categories are described as adventure, drama, comedy, etc.
- Inventory number (how many on shelf or on-hand) is also returned from the stores. This information is not consistently returned.
- New members are tracked for promotion purposes.

The following diagram provides an overall view of the TR processes just described along with the reporting processed described in the following section.

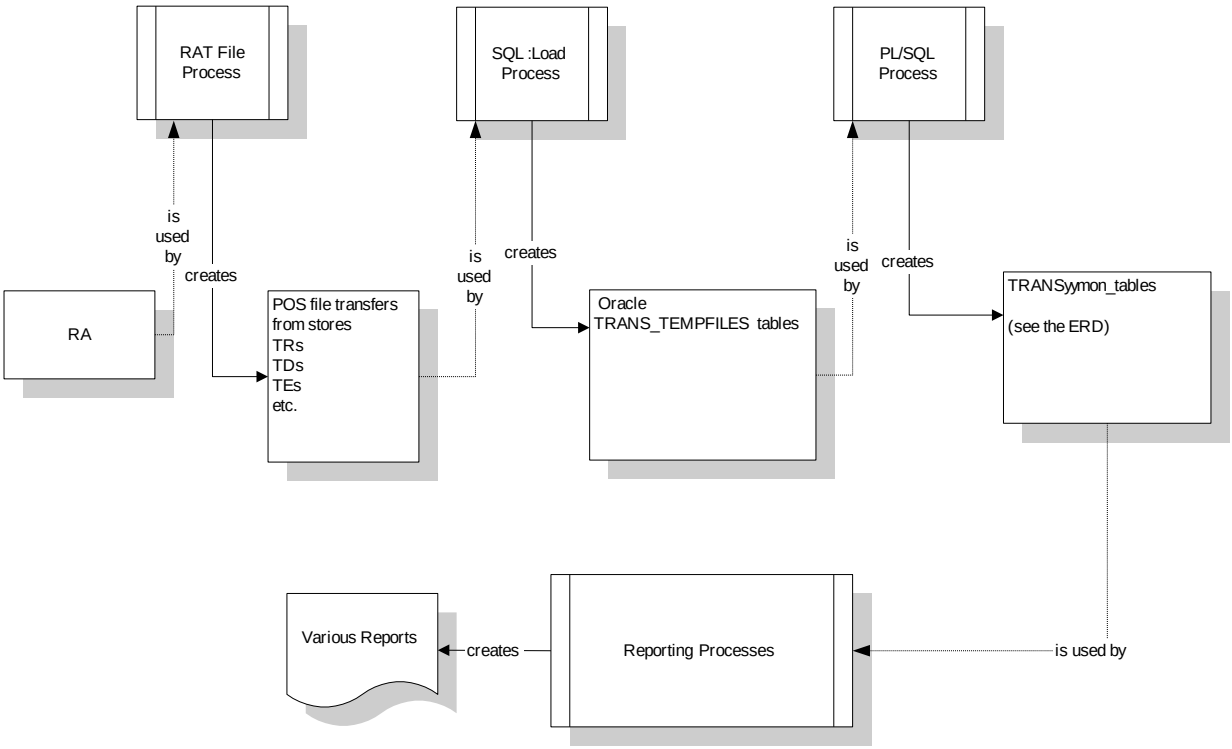

Figure 18. TR Process

Reporting Processes includes:

- Current Daily Flash Report
- Weekly Flash Report for (day)
- Under 9000 Report
- Key Performance Indicator
- Weekly Labor Report
- Weekly Labor Report: Week to date
- Product Flash Report: Week to date
- Product Flash by Store
- Weekly Flash Drill Report
- Weekly MP Report
- Weekly Games Report
- Weekly Game Report by Store
- Weekly Game Report by Schedule by Store
- Weekly Customer Exception Report by Store
- Weekly Game Bottom

- Quarterly Inventory Results
- Quarterly Inventory by Store

Data Model

Table Heading

TR View	Start	Description
TR_Files	[96Sep]	Old TR Format
TR_Invoices	[96Sep]	Invoice Header Records, one record per invoice.
TR_Detail	[96Sep]	Invoice line items, lowest level of revenue.
TR_Fast_Detail	[98Jan]	Invoice line items, lowest level of revenue, optimized, no header info.
TR_Tikey_Detail	[98Jan]	Invoice line items, optimized by tikey, no header info.
TR_Voids	[96Sep]	Voided late charges.
TR_Noninvoice	[96Sep]	Notes, coupons issued, ...
TR_Coupons	[96Sep]	Store/day/coupon qty, dollars
TR_Acc_Sales	[96Sep]	Store/day/item qty, dollars
TR_CatTurns	[96Sep]	Store/day/cat qty, dollars
TR_Turns	[98Jan]	Store/day/tikey qty, dollars
TR_Inventory	[96Sep]	Store/day/tikey on_hand, on_shelf
TR_Turns_Inv	[98Jan]	Turns and Inventory combined.
TR_ByHour	[96Sep]	Store/day/halfhour invoices, amount.
TR_Tdsc	[96Sep]	Store/day/product_key type, dept, cat, pricing_cat,.... amount, qty.
TR_GL	[96Sep]	Store/day/GL_code amount, qty
TR_Revenue	[96Sep]	Store/day xtrainfo_like revenue.

TR Table Descriptions

Table Name	Description	Owner
TR_FILES	Transaction invoice files,	
CUSTOMERS		
CUSTOMER_TURNS		
TRANS*yymon*_NEWMEMBERS		
STORE_DAYS		
TRANS*yymon*_INVOICEHEADER		
TRANS*yymon*_INVOICEDETAIL		
TRANS*yymon*_INVOICEBANKCARD		
TRANS*yymon*_INVOICELATEFEES		
TRANS*yymon*_INVOICETENDER		
TRANS*yymon*_DESCR		
TRANS*yymon*_CATURNS		
TRANS*yymon*_COUPONTURNS		
TRANS*yymon*_NONINVOICE		
TRANS*yymon*_NONINVOICEVOIDS		
TRANS*yymon*_INVENTORY		

THOR

In This Chapter…

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USplit 48
Load_Now 48
STOREDAY_PROCESS 48

Overview

THOR is a UNIX-based server, which is host to the Guardian database. The purpose of THOR is to take the COBOL flat files, sort the records and place them into SQL load files, then load the SQL files into the relational database. Other processes that run on THOR produce daily reports.

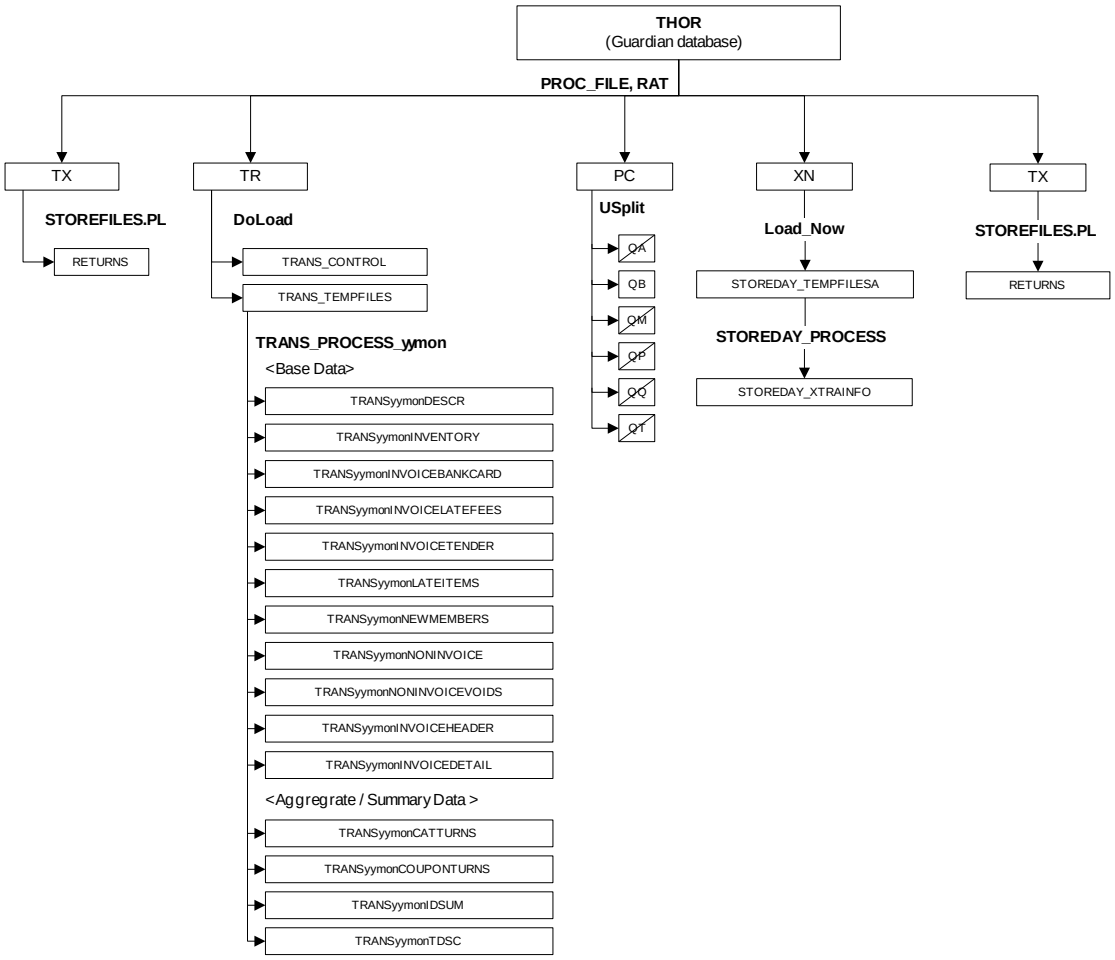

Figure 19. THOR –Data Flow, high level

RAT, PROC_FILES

The RAT process is responsible for splitting out the TR, TX, XN, and PC components from the incoming RA file.

Proc_Files

`Proc_Files` is a Cron-activated UNIX script that runs at 3 and 33 minutes past the hour. The purpose of `Proc_Files` is to extract the component data objects from TR that will subsequently load into the Guardian database. It separates the various files within RA, and creates SQL load files for subsequent updating into the Guardian database.

`Proc_Files` relies on the following UNIX programs to perform the dirty work:

- `clean_ra` – Removes old RA files.
- `log_files` – Creates the SQL load files from incoming RA files.
- `extract_files` – Control program for `RAT`.

- verify_files – Lists the files within the PC file. Also a control file for mv_files.
- RAT – a UNIX archive program similar to UNIX TAR. RAT runs on both machines independently, and breaks out the TR, TX, XN and PC files from RA for further processing.
- split_file – Control file for USplit and mv_files. Used to split the PC files into the "Q" files, and moving them to the required directory.
- USplit – similar to RAT, in that is splits a file into component parts.
- clean_rb – Removes old RB files from the SQL load files.
- mv_files – Moves files into the required directories.
- load_files – Loads the SQL load file for employee data.

While Proc_files is running, the RECHECK process examines the TRANS_CONTROL table for instances of "Bad Data" flags.

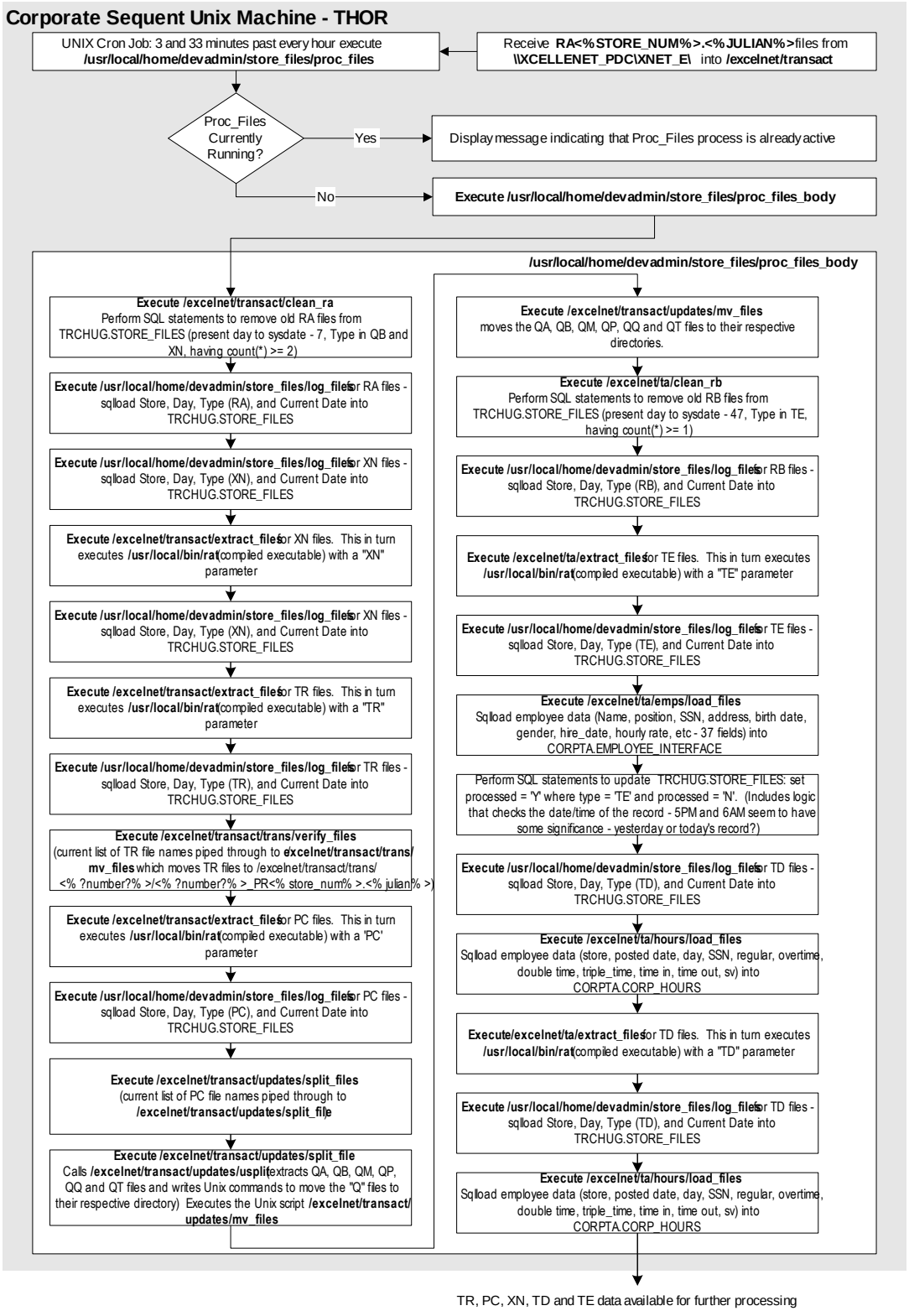

Figure 20. Proc_Files Process

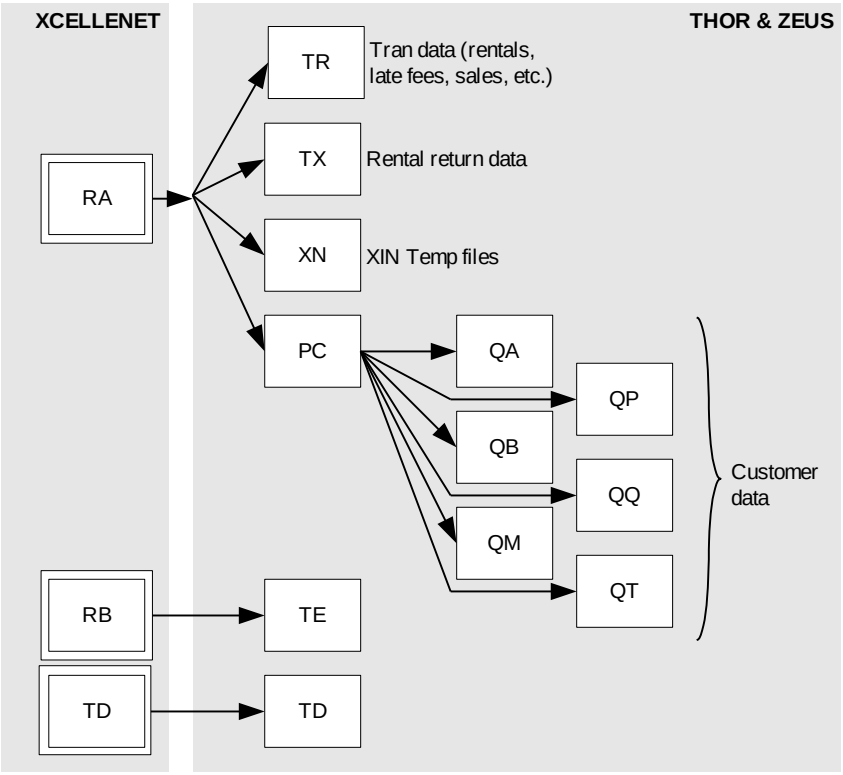

Figure 21. Proc_Files creates this data flow

Proc_files performs the following data manipulation as shown in Figure 21:

- Splits the RA file into TR, TX, XN and PC.
- Extracts the "Q" files from the PC file.
- Extracts TE from the RB file.
- Extracts the TD data file from the TD archive file.

All of the files created by `Proc_files` are used for subsequent processing by `DoLoad`.

DoLoad

DoLoad is a cron-activated UNIX script. Its purpose is to load the temporary SQL load files created by `Proc_Files` into the Guardian database.

- `log_cron` – Updates `TRCHUG.CRON_PROCESS`.
- `log_files` – Creates the SQL load files from incoming RA files.
- `trfilter` – Control file for `cleantr`.
- `cleantr` – Sets status flag in `TRANS_CONTROL` records.
- `fireload` – Control file for `makectls`.
- `makectls` – Control file for `tr00001.ctl` and `load_trs`.

- `tr00001.ctl` – An `SQLLOAD` control file.
- `load_trs` – Load raw TR files into temporary load files.

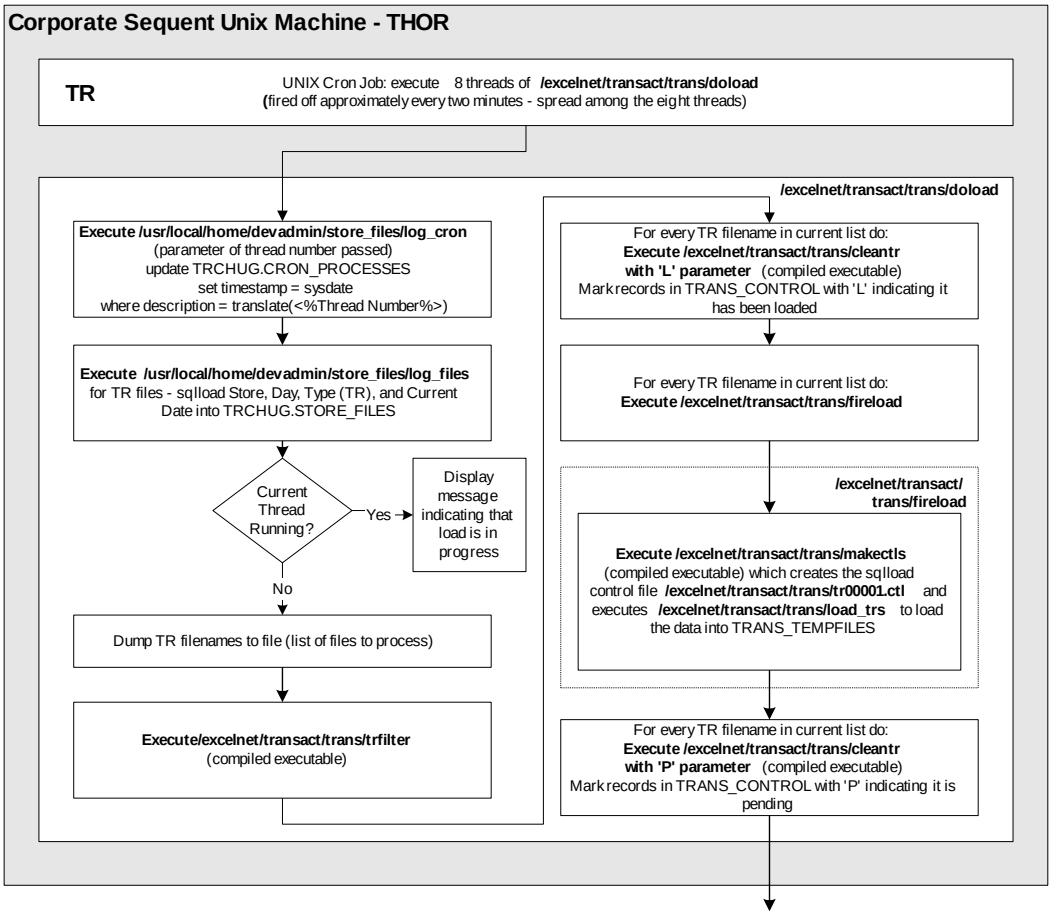

Figure 22. DoLoad Process

TRANSSUM_UPDATECONTROL and STOREDAY_UPDATECONTROL

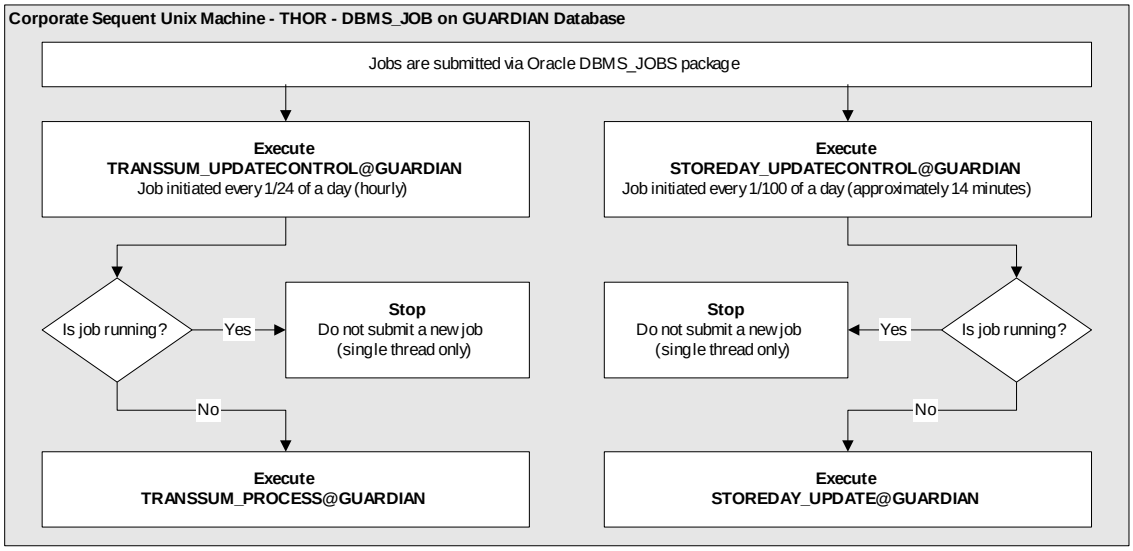

Figure 23. DBMS_Job process

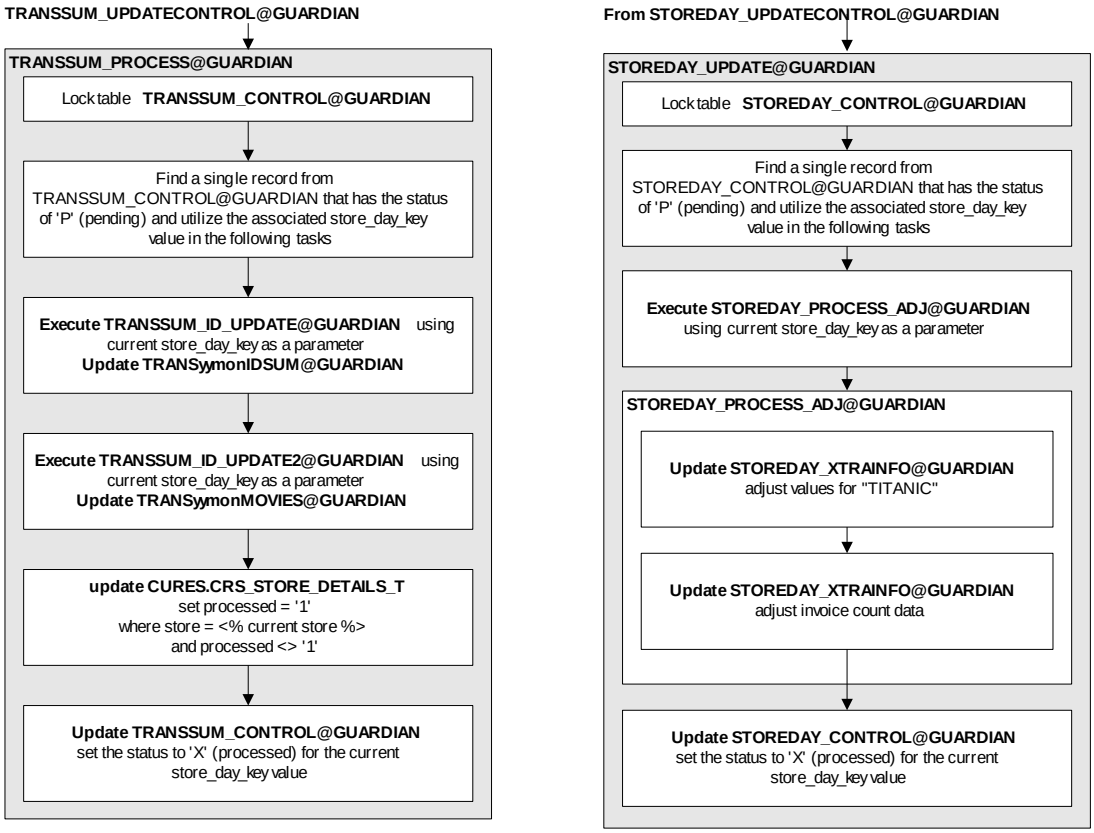

Figure 24. TRANSSUM_PROCESS, STOREDAY_UPDATECONTROL

Trans_Process_All

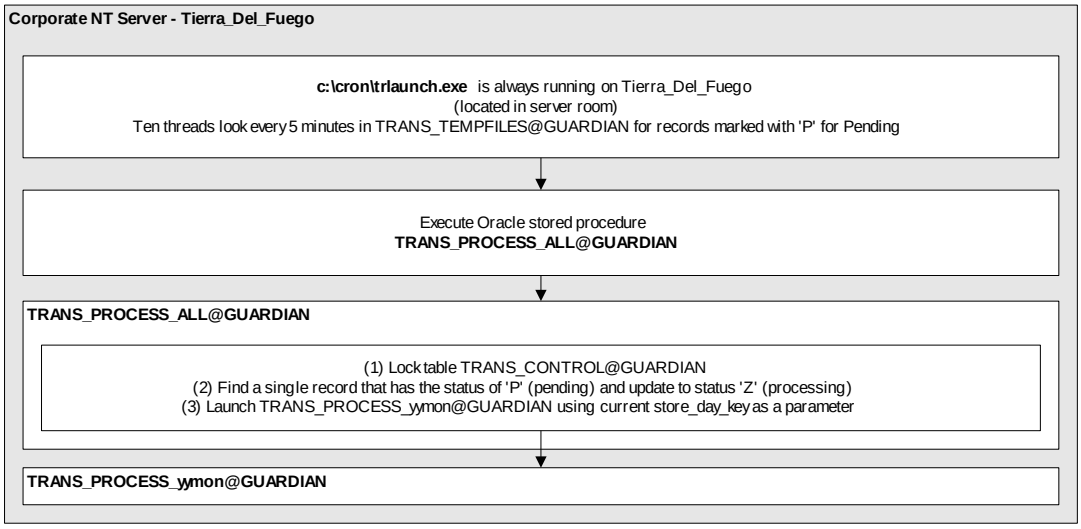

Figure 25. TR Processing in Guardian – TRANS_PROCESS_ALL

Trans_Process

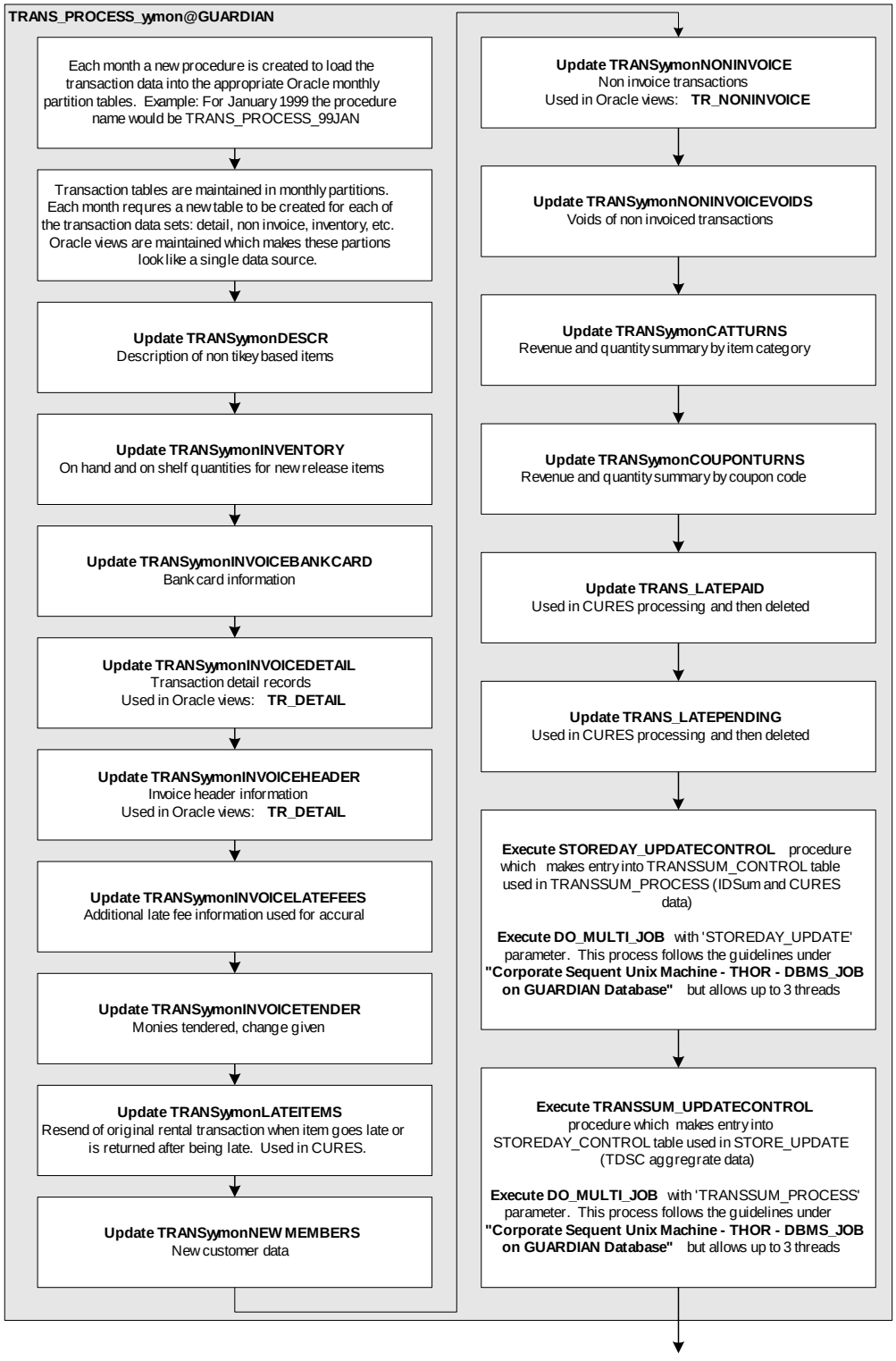

Figure 26. TR Processing in Guardian – TRANS_PROCESS

USplit

USplit is run on both THOR and ZEUS, but with different parameters, which alter its behavior:

- The `USplit` program on THOR extracts QB records from the PC file, and discards the remainder.
- The `USplit` program on ZEUS (see page 50) extracts all the other Q records from the PC file, and discards QB.

1. `QB` is moved to `/u78/transact/updates/B`
2. Run `do_bupd` on QB, which loads the customer data into Oracle tables.

Load_Now

The `Load_Now` process on THOR creates and loads XN data into the `STOREDAY_TEMPFILESA` table. A second table, `STOREDAY_TEMPFILESB`, contains the XN data, in the pre-1997 table format, but is no longer used.

STOREDAY_PROCESS

This SQL process takes the `STOREDAY_TEMPFILESA` temporary data created by `Load_Now`, and loads it into `STOREDAY_XTRAINFO`.

RECHECK

Once an hour, this process reviews the `TRANS_CONTROL` table for instances of records marked as "`BAD DATA`".

ZEUS

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Do_Chug (a.k.a., TR_Chug) 50
USplit 50
SQLLOAD 51
QA Processing 51

Overview

Zeus is a UNIX-based server, which is host to the Athena database.

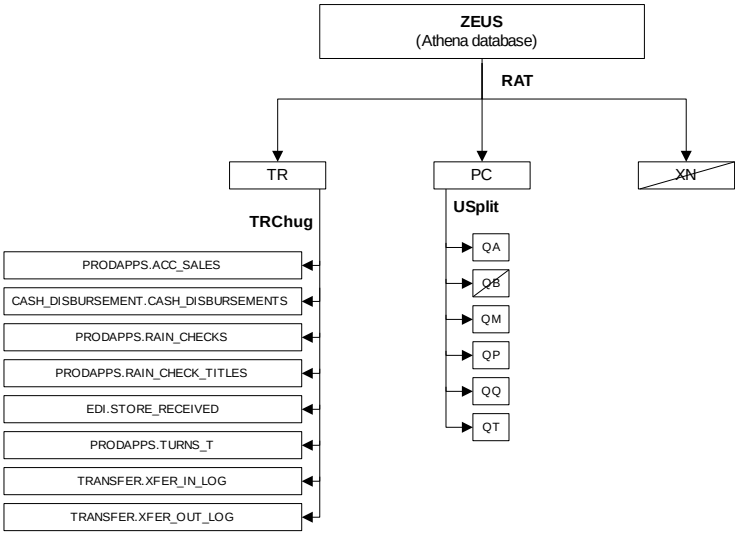

Figure 27. ZEUS - High level process view

1. Raw files are received into the `/u78/transact/` directory
2. The RAT program separates RA into three files: TR, PC, XN.
   - TR files are moved into the /u78/transact/trans/ directory.
   - PC files are moved into the /u78/transact/updates/ directory.
   - XN files are deleted (they are processed only on THOR).
3. TR Chug is run against the TR files.
4. Usplit is run against the PC files.

Do_Chug (a.k.a., TR_Chug)

For every TR file, Do_Chug performs the following:

- Process Accessory Sales: `PRODAPPS.ACC_SALES@ATHENA`
- Process Cash Disbursements: `CASH_DISBURSEMENT.CASH_DISBURSEMENTS@ATHENA` ***(Outdated table? Unable to find)***
- Process Rain Checks: `PRODAPPS.RAIN_CHECKS@ATHENA`, `PRODAPPS.RAIN_CHECK_TITLES@ATHENA`
- Process Store Receipts: `EDI.STORE_RECEIVED@ATHENA`
- Process Turns: `PRODAPPS.TURNS_T@ATHENA`, `PRODAPPS.WEEKLY_TURNS_T@ATHENA` (separate process)
- Process Transfers: `TRANSFER.XFER_IN_LOG@ATHENA`, `TRANSFER.XFER_OUT_LOG@ATHENA`

USplit

Similar to `RAT`, in that is splits a file into QA, QB, QC, QM, QP, QQ, QT component parts.

- `QA` holds accessory inventory data
- `QB` holds customer inventory data
- `QC` holds machine inventory data
- `QM` holds movie inventory data
- `QQ` holds inventory summary data
- `QP` holds purchase order inventory data
- `QT` holds inventory transfer data

It moves the separated files into appropriate locations:

1. `QA` is moved to `/u78/transact/updates/A`
2. `QC` is moved to `/u78/transact/updates/C`
3. `QM` is moved to `/u78/transact/updates/M`
4. `QP` is moved to `/u78/transact/updates/P`
5. `QQ` is moved to `/u78/transact/updates/Q`
6. `QT` is moved to `/u78/transact/updates/T`
7. Run `do_aupd` on QA, which loads the accessory inventory data into Oracle tables.
8. QB files are deleted (they are processed on THOR).

9. Run do_cupd on QC, which loads the machine inventory data into the movie Oracle tables.
10. Run do_mupd on QM, which loads movie inventory data into the movie Oracle tables.
11. Run do_pupd on QP, which loads the PO requests/acks/receiving inventory data into Oracle tables.
12. Run do_qupd on QQ, which loads the inventory summary data into Oracle tables.
13. Run do_tupd on QT, which loads the inventory transfers data into Oracle tables.

SQLLOAD

Creates the temporary SQL file ACCESSORIES_UPD.

Performs various data integrity checks, such as tikeys, store numbers, etc.

accessoriesupd

Loads the file ACCESSORIES_UPD and uses it to load the ACCESSORIES data table in the production DB.

QA Processing

File name: QA_.J

Processed by MAKEACTL

Processed by SQLLOAD

Tierra Del Fuego

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TDF2 56

Overview

Two NT processors comprise Tierra Del Fuego:

- TDF1 monitors TR processing on THOR.
- TDF2 launches TR processes on THOR.

The purpose of Tierra Del Fuego is to monitor and control TR processing on THOR.

TDF1

TR File Monitor

This relays TR process status in the form of a web page. It monitors nightly TR processing, used to access transaction statistics. This web page is located at: `http://172.16.10.154/trfiles/trfiles.html`.

Prev. Next

TR File Processing Info Updated: Mar. 29, 1999 07:49pm

Raw TR Files	Turns & ID Summary	Closeout Adjustments
Processed 98 Pending 0 Working 0 Errors 0 Loading 0 No Data Found 0 [TRANS]	Processed 98 Pending 0 Working 0 Errors 0 [TRANSSUM]	Processed 98 Pending 0 Working 0 Errors 0 [STOREDAY]

Process	ON
Active Processes	0
Idle Processes	11
Average process time:	0:3:40
Average lag time:	1:58:35
Record Count	2443672
Temp space free	81%
Status	**Stores**
Bad Data	1
Processed	1318

Process	ON
Active Processes	0
Idle Processes	1
Average process time:	0:1:29
Status	**Stores**
Processed	1318

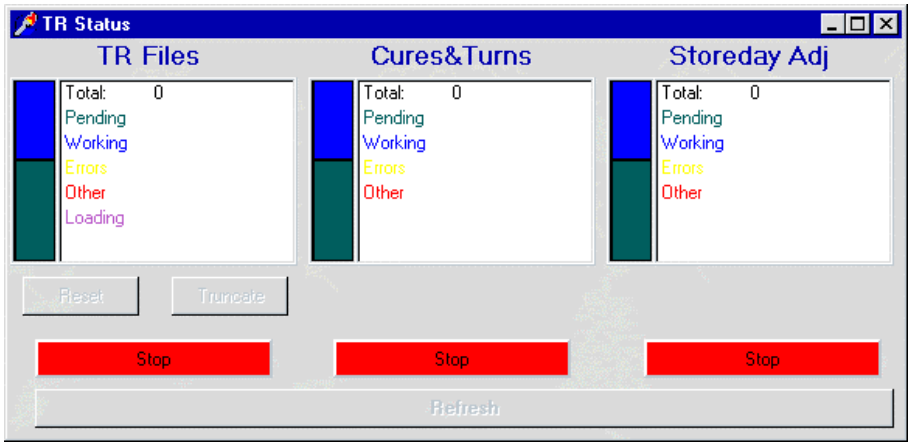
Process	ON
Active Processes	0
Idle Processes	1
Status	**Stores**
Error	2
Processed	1317

Bad Data

Store	day	TR	XN
018489	3/27/99	1528.74	2788.5
005687	3/28/99	1379.34	1787.08

TR Status

This is a real-time status screen and process control program.



WIDELOAD

This process checks the data in the view/table to determine if all Store flat files have been accounted for. `WIDELOAD` runs hourly, and sleeps between 8pm and 6am to allow regular nightly processing to complete.

The Oracle view, `TR_FILES_MISSING` compares the information currently in `TRANS_CONTROL` to Athena database `VALID` table. The `VALID` table is a combination of the `NSTORES` table and the `CALLISTO` table, used by Tech Support. The `TR_FILES_MISSING` view is used to determine which stores should be reporting data on a given business day.

`WIDELOAD` uses the table `TR_FILES_MISSING` to check for missing data files and, if found, copies them from a cache directory for store flat files (`\\RETAIL\Vol1\Video2\Trans\`).

TRANS_PROCESS_ALL

This process manages the `TRANS_CONTROL` table, which keeps track of every store flat file received. For each file, there are three fields: Store, Day and Status. Status takes one of the following values:

- `L` – Loaded
- `P` – Pending
- `Z` – Processing
- `X` – Processed
- `B` – Bad
- `E` – Error

TDF2

Appendix A. File Formats at the Store

In This Chapter…

Overview 57

Overview

Several files are maintained at the store's file server which hold transaction and other financial data, customer, inventory, transfers and purchase order information. More information on the processing of these files is in Store Processing, on page 9.

Appendix B. File Formats at Corporate

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CF – Store config file from \VIDEOII\ 60
IA – Accessory inventory 61
IM – Movie inventory 62
IU – Item update file 63
LO – Low disk space marker file 64
MO – Movie inventory posting report 65
MV – Movie inventory data file 66
PB – Phone Book 67
PC – Customer Info 68
RA –Container for TR/XN/PC 69
RA.TXT 70
RB – Container for TE 71
RP – Closeout Report 72
RT – Already checked-in items 76
RW.LOG – Remoteware communications log file 77
SC – Employee schedule information 78
STATCAP 79
TC – TAS trace file Troubleshooting 80
TD – Timecard Edits 81
TE – Payroll Edits 82
TR – Transaction Info 83
TX – Transaction info 85
UT – Tax information 86
UU – UPC update file 87
WS – Workstation Configuration 88
XN – Extra info 89

Overview

This section provides the file record structure within each file received in the R1 transmission file at Corporate. Unless otherwise noted, all files are ASCII. All records within are delimited by <CRLF>. Many files are ASCII versions of reports that have been pre-formatted for printing. Of these types of files, no automated processing is performed on their content.

AC – List of active members

This file is generated by ACTMEM.GNT on the server. As there are no automated processes that move or process this file, it is eventually deleted on XCELLENET.

Example file structure:

```
Store: 957
Date: 990412
Processed: 009811
Active0-30:  001942
Active30-60:  000728
Active60-90:  000604
Active90-180:  001502
Active180+: 005035
Ending Status: 10
```

CF – Store config file from \VIDEOII\

Example file structure: *(shown in two columns; actual file is one column):*

```
Field      Data
-----------------------------------------------
CLOSE_XMAS³2300
CLOSE_XEVE³2200
CLOSE_MON ³2300
CLOSE_TUE ³2300
CLOSE_WED ³2200
CLOSE_THR ³2300
CLOSE_FRI ³2300
CLOSE_SAT ³2300
CLOSE_SUN ³2300
LASER_PORT³lpt1:
LABEL_HEAD³HOLLYWOOD VIDEO
LABEL_PV  ³HOLLYWOOD VIDEO PREVIOUSLY VIEWED
LABELS    ³5160
C_#LTR    ³002
C_#CLS/LT1³002
C_#CLS/LT2³002
C_#CLS/CRP³002
C_#DYS/LT1³007
C_#DYS/LT2³014
C_#DYS/CRP³022
C_#DYS/BTL³005
SUPPORT_NO³8006729974
MANAGER   ³JEANETTE  PRESLEY
STORE_NUM ³001504
MAX_MANUAL³0001000
VOID_MIN  ³0001000
DEAD_PASS ³060
CODE_GREEN³0200
MEM_VERIFY³180
MACD#1    ³0005000
MACD#2    ³0002500
MACD#3    ³0005000
MACD#4    ³0002500
MACD#5    ³0005000
MACD#6    ³0005000
MACD#7    ³0005000
NEWINVOICE³Y
MERCH CAT ³Y
MERCH_CAT ³Y
GAME_INST ³Y
TIKEYREADY³Y
RCHECK01  ³CR01.TXT³EVER AFTER
RCHECK02  ³CR02.TXT³SOLDIER (1998)(KURT RUSSELL)
RCHECK03  ³CR03.TXT³WHAT DREAMS MAY COME
RCHECK04  ³CR04.TXT³WATERBOY, THE
RCHECK05  ³CR05.TXT³MULAN (DISNEY)
RCHECK06  ³CR06.TXT³ONE TRUE THING
RCHECK07  ³CR07.TXT³PLEASANTVILLE
RCHECK08  ³CR08.TXT³SATISFACTION GUARANTEE
RCHECK09  ³CR09.TXT³RUGRATS-MOVIE, THE
RCHECK10  ³CR10.TXT³
RCHECK11  ³CR11.TXT³ANTZ
RCHECK12  ³CR12.TXT³ROUNDERS
RCHECK13  ³CR13.TXT³VAMPIRES (JOHN CARPENTER)
RCHECK14  ³CR14.TXT³PRACTICAL MAGIC
RCHECK15  ³CR15.TXT³RONIN
RCHECK16  ³CR16.TXT³N64-CRUISIN WORLD
RCHECK17  ³CR17.TXT³N64-ZELDA-OCARINA OF TIME
RCHECK18  ³CR18.TXT³URBAN LEGEND
RCHECK20  ³CR20.TXT³
DEF_A_VEND³0000002632
DEF_M_VEND³0000002632
EARLY_CATS³N2N3N4G1S1G4S4DV
GIFT_CERT ³YYYYYYY 800101 991231
MACD#9    ³0020000
MEMTYPE_FT³00000000 09 04 01
MEMTYPE_NW³00003000 09 04 01
MEMTYPE_MT³99999999 09 04 01
RWATCH15  ³010
RWATCH19  ³010
SENIOR_DCT³60 10 10 10
BDAY_FREE ³Y
FRIENDSFAM³YYYYYYY 981202 981202
AUTO_AUTH ³Y
BOX_GRACE ³001
```

IA – Accessory inventory

This file contains the accessory inventory scan information. `INV_SEQ` is the inventory sequence number, which is used to distinguish between multiple inventories (i.e., multiple inventories done in one day).

IM – Movie inventory

This file contains the movie inventory scan information. `INV_SEQ` is the inventory sequence number, which is used to distinguish between multiple inventories (i.e., multiple inventories done in one day).

IU – Item update file

This file contains changes to the store items database.

Example file structure:

```
990122 IUDATA.MAN   Total: 000002 Inserts: 000001 Updates: 000001 Deletes: 000000 Bad: 000000 End: 00
```

LO – Low disk space marker file

Example file structure:

```
STORE # 020812'S LOCAL HD IS LOW ON DISK SPACE!!
THIS PREVENTED THE EMERGENCY BACKUP FROM BEING DONE

 Volume in drive F is SYS
 Volume Serial Number is 300B-7CD9
 Directory of F:\

LOGIN        <DIR>     09-30-98   1:16a
SYSTEM       <DIR>     09-30-98   1:16a
PUBLIC       <DIR>     09-30-98   1:16a
MAIL         <DIR>     09-30-98   1:16a
ETC          <DIR>     09-30-98   1:34a
MARS         <DIR>     09-30-98   4:42p
FED          <DIR>     09-30-98   4:42p
VIDEOII      <DIR>     09-30-98   4:42p
AUTO         <DIR>     09-30-98   4:42p
AW           <DIR>     09-30-98   4:42p
DOS          <DIR>     09-30-98   4:42p
ROOT         <DIR>     09-30-98   4:42p
TA           <DIR>     09-30-98   4:42p
SCHED        <DIR>     09-30-98   4:42p
NODESYS      <DIR>     09-30-98   4:42p
IN           <DIR>     09-30-98   4:42p
OUT          <DIR>     09-30-98   4:42p
CPA          <DIR>     09-30-98   4:42p
TAS          <DIR>     09-30-98   4:42p
32ENH        <DIR>     11-12-98  11:58a
LPDSIM       <DIR>     03-16-99   9:42a
PORCDEMO     <DIR>     03-16-99   9:42a
PHOENIX      <DIR>     03-16-99   3:42p
LABOR        <DIR>     03-16-99   3:42p
MEMO         <DIR>     03-16-99   4:36p
NEOWARE      <DIR>     03-16-99   4:39p
CURES        <DIR>     03-16-99   5:01p
       27 file(s)          0 bytes
                   478216192 bytes free
```

MO – Movie inventory posting report

This is an ASCII version of a report that has been pre-formatted for printing.

This file provides two types of data: reconciliation-posting report and an automatically checked-in report. Each report provides the following information:

- Category
- Title
- Movie ID
- Message
- Last Member #
- Date Due

Example file structure:

```
□E□(10U
                H O L L Y W O O D  E N T E R T A I N M E N T
                    RECONCILIATION-POSTING REPORT:  Movie

CATEGORY(S) -> 1G G1 G2 G3 G4 G6 G7 G8 GA GF GG GH GL GP GR GS S1 S2 S4 S5 S6 S7
               S8 T4 G1 G2 G3 G4 G6 G7 G8 GA GF GG GH GL GP GR GS S1 S2 S4 S5 S6
               S7 S8 T4
DATE : 11/02/98  TIME :  9:15 AM                                        PAGE:   1
TITLE                  CAT MOVIE ID     MESSAGE         DATE DUE
====================== == ============ ==============   ========
                           ------
         CATEGORY TOTAL  =       0
                           ------
   GRAND CATEGORY TOTALS =       0

[Page break]
                H O L L Y W O O D  E N T E R T A I N M E N T
                   AUTOMATICALLY CHECKED-IN REPORT:  Movie

CATEGORY(S) -> 1G G1 G2 G3 G4 G6 G7 G8 GA GF GG GH GL GP GR GS S1 S2 S4 S5 S6 S7
               S8 T4 G1 G2 G3 G4 G6 G7 G8 GA GF GG GH GL GP GR GS S1 S2 S4 S5 S6
               S7 S8 T4
DATE : 11/02/98  TIME :  9:16 AM                                        PAGE:   1
TITLE                  CAT MOVIE ID     MESSAGE         DATE DUE
====================== == ============ ==============   ========
N64-BATTLETANX           G1 S015004     Checked-in      00150004555     3/18/99
N64-IGGY'S RECKIN BALLS  G1 23706359    Checked-in      00150003129     3/11/99
N64-TWISTED EDGE SNOWBOA G1 S01500588   Checked-in      00150004515     3/15/99
N64-WAYNE GRETZKY '98    G1 S055915352  Checked-in      00150003186     3/11/99
SONY-CAESAR'S PALACE 2   S1 23706384    Checked-in      00150002966     3/14/99
SONY-DEMO ROLLCAGE       S1 S015003127  Checked-in      00150001938     3/17/99
SONY-FINAL ROUND GOLF    S1 13362148    Checked-in      00150000849     3/17/99
SONY-TWISTED METAL 3     S1 25164913    Checked-in      00150001834     3/12/99
                           ------
            GRAND TOTAL  =       8
```

MV – Movie inventory data file

Example file format (no records):

```
0|      99030308415060              > □        □       □1  □1                                                □*□Ÿ
```

Example file format (non-empty file):

```
0|      99022209595866              > □        □       □1  □1                                                □*□Ÿ
B100010666RAINEY, MARK                 990222100000867001000857990222101901RAINEY, MARK
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4
000100100300 B100020666RAINEY, MARK                 990223095100862003700825990223100901RAINEY, MARK
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4
000370100100 B100030666HOLM I, WILLIAM A            990224083800856000000856990224091001HOLM I, WILLIAM A
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4G1G2G3G4G6G7G8GAGFGGGHGLGPGRG
SS1S2S4S5S6S7S8T4
000040200600 B100040666HOLM I, WILLIAM A            990225084300857000000857990225092401HOLM I, WILLIAM A
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4G1G2G3G4G6G7G8GAGFGGGHGLGPGRG
SS1S2S4S5S6S7S8T4
000070200200 B100050666COOK, BOBBIE                 990226084500857000200855990226094501COOK, BOBBIE
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4G1G2G3G4G6G7G8GAGFGGGHGLGPGRG
SS1S2S4S5S6S7S8T4
000050300600 B100060666RAINEY, MARK                 990302100500871000800863990302102601RAINEY, MARK
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4
000080100200 B100070666HOLM I, WILLIAM A            990303090000869000200867990303094601HOLM I, WILLIAM A
0010000000000000000000000000000000000000000001GG1G2G3G4G6G7G8GAGFGGGHGLGPGRGSS1S2S4S5S6S7S8T4G1G2G3G4G6G7G8GAGFGGGHGLGPGRG
SS1S2S4S5S6S7S8T4
000050200100
```

PB – Phone Book

Example file structure:

```
5032531234  1            03745814143
5032541068  1            AG06612
5032526623  1            03745814142
5032849456  1            03719306158
5032535483  1            15537560
5032537022  1            03745814141
5032534604  1            03745814140
5032541640  1            03745814139
5032510475  1            03745814137
5034088352  1            03745814136
5037747291  1            03715554282
5037620644  1            03745814135
503262999<  25032629983  03719320809
5032629983  1            03719320809
5032567910  1            03745814134
5037759866  1            E545391114
5037714203  1            03745814145
5032329619  1            03745814130
5035408724  1            03745814133
5037609180  1            03745814132
5032618548  1            03745814127
5036632131  1            03745814128
5032575023  1            03745814126
5036614368  1            03745814125
5037605242  1            03745814124
5032529940  1            03745814123
```

PC – Customer Info

Extracted from RA file. Compressed using RAT, but is uncompressed when moved to THOR and ZEUS.

When uncompressed, the PC file has the following format:

Typical header record format:

```
116693990122      1150HOLLYWOOD VIDEO #150          HOLLYWOOD VIDEO     11875 SW BVTN. HILLSDALE HWY  BEAVERTON
OR503641160897005
```

Typical record format:

```
00000000000000000000023592359235923592359235923590000000000000000000000000000000000000000000001111111000000000000
1SUNYYMEMBER ALT KEY 026025000087100100010100010010100000NYNN00 N3NNY
000
00036525036525200YN       000N              N1132208   1132199   N00000000000000265-Y0300H
12140429990122A0000012739                   000000012739  150KI   LITTLE MERMAID (DISNEY)       MV
```

RA –Container for TR/XN/PC

The RA file is RAT-compressed. When expanded, it becomes the TR, XN, and PC files.

RA.TXT

Example file structure:

```
037150990125102450 60YENGA0001541829
037150990125102456 26YENGAS3715018674
037150990125102520 75YENGAS3715019629
037150990125103420 07YENGA24583736
037150990125103609 15YENGA24583592
037150990125103649 19YENGAS3715013827
037150990125103652 05YENGAS3715013827
037150990125103711 71YENGAS3715018567
037150990125103811 52YENGAS3715010127
037150990125103832 45YENGAS3715010127
037150990125131920 06YENGAS3715025189
037150990125151524 06YENGAS3715025984
037150990125151529 77YENGAS3715025254
[…]
```

RB – Container for TE

The `RB` file is RAT-compressed. When expanded, it becomes the `TE` file.

RP – Closeout Report

This is an ASCII version of a report that has been pre-formatted for printing.

The RP file is in several parts, printed as a batch process, separated by page breaks:

- Daily Revenue Deposit Report
- Cash Drawer Balance Report
- Coupon Redemption Report
- Sales Report
- Exemptions Report
- Employee Payment Type Report
- Adjustments Report

Example file format (condensed):

Daily Revenue Deposit Report

```
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  1
 2/01/99                  DAILY REVENUE/DEPOSIT REPORT                10:31 pm
                           FOR BUSINESS DAY:  2/01/99
--------------------------------------------------------------------------------
REVENUE
   RENTALS
      MOVIE RENTALS          84  88%   $223.35  87%
      MACHINE RENTALS         1   1%     $9.99   3%
      LATE CHARGES           14  14%    $26.96  10%
      RENTAL COUPONS          4   4%<    $4.00>  1%
   TOTAL RENTALS             95  89% ---------->   $256.30   84%

   ACCESSORY SALES
      SELL THROUGH            0   0%     $0.00   0%
      PREVIOUSLY VIEWED       5  45%    $41.95  87%
      GROCERIES               6  54%     $5.99  12%
      GIFT CERTIFICATES       0   0%     $0.00   0%
      ACCESSORIES             0   0%     $0.00   0%
      MACHINE SALES           0   0%     $0.00   0%
   TOTAL SALES               11  10% ---------->    $47.94   15%

TOTAL REVENUE               106      ============================>   $304.24

   REVENUE ADJUSTMENTS
      GIFT CERTIFI            1     <    $5.00>
      AR PAYMENTS             0          $0.00
      CASH REFUNDS            0          $0.00
   TOTAL REVENUE ADJU         1   0% ---------><    $5.00>   0%

NET REVENUE                 105      ============================>   $299.24

ADJUSTMENTS
      SALES TAXES             0          $0.00
      DEPOSIT REFUNDS         0          $0.00
      DEPOSITS                0          $0.00
      CASH PAYOUTS            0          $0.00
      ON ACCOUNT              0          $0.00

TOTAL ADJUSTMENTS                    ============================>     $0.00
```

```
TENDERS
      CASH                  47  94%   $286.79  95%
      CHECK                  2   4%     $8.96   2%
      BANKCARD               1   2%     $3.49   1%

TOTAL TENDERS               50      ==============================>   $299.24

BANK DEPOSIT
      CASH/CHECKS                     $295.80
      VISA/MASTERCARD                   $3.49
      AMERICAN EXPRESS                  $0.00
      DISCOVER CARD                     $0.00

TOTAL BANK DEPOSIT                    ==============================>   $299.29

CASH <SHORT>/OVER                     ==============================>     $0.05

      AUTH ONLY CREDIT C      1         $50.00

LABOR HOURS:    10.21     LABOR DOLLARS:   $66.34     LABOR PERCENT:  21.87%
TEMPERATURE:    60        SKY: CLOUDY                 PRECIPITATION: RAIN
NEW MEMBERS:     3
EXPLANATION OF -
CASH SHORT/OVER -

         Closer's Signature: _____________________________________

              *** PLEASE ATTACH TO DAILY CASH AUDIT SHEET ***

[Page Break]
```

Cash Drawer Balance Report

```
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  2
 2/01/99                   CASH DRAWER BALANCE REPORT                  10:31 pm
                           FOR BUSINESS DAY:  2/01/99
--------------------------------------------------------------------------------
Stn Drw Emp    CASH    CHECK   BANKCAR ON ACCO
--------------------------------------------------------------------------------
  2  2  MEGAN  114.98
       TOTAL  114.98

         Open     Closed
 Date:  02/01/99  02/01/99
 Time:     12:04     16:07
Count:     $0.00   $114.98
Authorized Employee: MEGAN


--------------------------------------------------------------------------------
Stn Drw Emp    CASH    CHECK   BANKCAR ON ACCO
--------------------------------------------------------------------------------
  3  1  JOY      1.99
       SMGR    63.09    1.98    3.49
       TOTAL   65.08    1.98    3.49

         Open     Closed
 Date:  02/01/99  02/01/99
 Time:     10:01     19:05
Count:     $0.00    $70.55
Authorized Employee: SMGR


--------------------------------------------------------------------------------
Stn Drw Emp    CASH    CHECK   BANKCAR ON ACCO
--------------------------------------------------------------------------------
  4  1  JOY     94.03    6.98
       SMGR    12.70
       TOTAL  106.73    6.98
```

```
         Open     Closed
 Date:  02/01/99  02/01/99
 Time:     16:55     22:08
Count:     $0.00   $113.71
Authorized Employee: JOY


--------------------------------------------------------------------------------

[Page Break]
```

Coupon Redemption Report

```
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  3
 2/01/99                    COUPON REDEMPTION REPORT                   10:31 pm
                          FOR BUSINESS DAY:  2/01/99
--------------------------------------------------------------------------------
Id Number    Description                    Qty $ Value  Cnt  +/-
--------------------------------------------------------------------------------

DOL          $1.00 OFF RENTAL                 4    4.00    4    0
--------------------------------------------------------------------------------
TOTAL                                         4    4.00    4    0

CLOSING MANAGER SIGNATURE: _____

[Page Break]
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  4
 2/01/99                    COUPON REDEMPTION REPORT                   10:31 pm
                          FOR BUSINESS DAY:  2/01/99
--------------------------------------------------------------------------------
Id Number    Description                    Qty $ Value  Cnt  +/-
--------------------------------------------------------------------------------

DOL          $1.00 OFF RENTAL                 4    4.00    4    0
--------------------------------------------------------------------------------
TOTAL                                         4    4.00    4    0

CLOSING MANAGER SIGNATURE: _____

[Page Break]
```

Sales Report

```
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  5
 2/01/99                           SALES REPORT                        10:31 pm
                          FOR BUSINESS DAY:  2/01/99
--------------------------------------------------------------------------------
Part Number   Description                   Quantity     Unit $    $ Amount
--------------------------------------------------------------------------------

0999913637    CA-BLACK FOREST GUMMY WO (5 OZ       1       $1.25       $1.25
0999918460    CA-DOTS TROPICAL (7 OZ.)             1       $0.75       $0.75
0999917746    CA-NERDS (7 OZ)                      1       $0.99       $0.99

  DEPARTMENT TOTAL    GR                         6                   $5.99

--------------------------------------------------------------------------------

0020526893    PV-DR. DOLITTLE (1998)               1       $7.99       $7.99
0020447595    PV-FIERCE CREATURES                  1       $9.99       $9.99
0020525621    PV-GODZILLA (1998)                   1       $7.99       $7.99

  DEPARTMENT TOTAL    PV                         5                  $41.95

--------------------------------------------------------------------------------
```

```
  TOTAL SALES                                    11                $47.94
VOIDED LATE CHARGES:
   Id number Description         Cat Member     Employee St Time  Dys  Amount
-------------------------------------------------------------------------------
S374522783   WAG THE DOG            03745208870  SMGR   3  1 08pm  1 VD   $3.49
S374522488   LOCUSTS, THE           03745209275  SMGR   4  7 19pm  1 VD   $3.49
-------------------------------------------------------------------------------
TOTAL VOIDED LATE CHARGES                                                $6.98
===============================================================================
TOTAL FOUND ON SHELF                                              0 FS   $0.00
TOTAL DROP BOX                                                    0 BX     N/A
TOTAL SPECIAL VOIDS                                               2 VD   $6.98
TOTAL LATE GRACE                                                  0 OR   $0.00
===============================================================================


TOTAL NET EDITED                                                        $0.00
TOTAL VOIDED TRANSACTIONS                                               $0.00
TOTAL VOIDED LATE CHARGES                                               $6.98

[Page Break]
```

Employee Payment Type Report

```
037452 11.5              HOLLYWOOD VIDEO - EUGENE #452                Page:  6
 2/01/99                      EMPLOYEE PAYMENT TYPE                    10:31 pm
                           FOR BUSINESS DAY:  2/01/99
-------------------------------------------------------------------------------
          Manual       Free         Void
   Emp  Num   Dol    Num   Dol    Num   Dol
-------------------------------------------------------------------------------
  JOY     0    0.00    0    0.00    0    0.00
  MEGAN   0    0.00    0    0.00    0    0.00
  SMGR    2    6.98    0    0.00    0    0.00
-------------------------------------------------------------------------------
```

RT – Already checked-in items

%store_num%%check_in_date%%check_in_time%%employee_ID%%rental_ID%
Example:
035773990205101131O5JEN S357739836

[See Tom Naganuma]

RW.LOG – Remoteware communications log file

[See Tom Naganuma]

SC – Employee schedule information

This file will be obsolete when the Labor Management System is implemented: Apr1999.

STATCAP

This file is received every Wednesday. It averages one megabyte per store. The file is manually put on a ZIP disk and sent to vendors for product data collection.

TC – TAS trace file Troubleshooting

Example file structure:

```
acquirer_bin              449280
visa_merchant_number      347900015046
amex_merchant_number      347900015046
bankcard_phone            9500990
bankcard_phone_backup     18005334488
check_merchant_number     20101504
check_phone               18002811311
disc_merchant_number      347900015046
merchant_cat_code         7841
store_number              001504
tcpip_address             192.168.150.15
tcpip_port                8060
tcpip_timeout             35
timezone_code             706
trace_filename            \tas\tas.trc
trace_level               1
zip_code                  35603
```

TD – Timecard Edits

ASCII file. One record per row. Fields are comma-delimited. Content is enclosed in quotes. No spaces.

Content format:

```
"%store_num%","%report_date% %report_time%","%transaction_date%","%employee_number%","%rate%",
"0.00","0.00","0.00","%time_in%","%time_out%","N","N"
```

Example file structure:

```
"003989","02/06/1999 00:40:56","02/01/1999","526893638","8.38","0.00","0.00","0.00","16:35","01:30","N","N"
```

TE – Payroll Edits

ASCII file. One record per row. Fields are comma-delimited. Content is enclosed in quotes. No spaces.

Non-empty content example – version 2.0:

```
V2.0"009661","10/09/1998 14:33:52","I","040789643","MUNOZ","FABIAN","","7980 NW 50TH ST #5-
204","","LAUDERHILL","FL","333510000","9547484285","M","06011968","EE","3","D","2","N","10021996","S00040","10021996","2",
"00.00","","","","A","10021996","M","0","","",""
marker
```

Non-empty content example – version 3.0: (NOTE: Each record starts on a new line, with "V3.0")

```
V3.0"035791","03/01/1999 08:19:00","U","274746260","BELL","CRYSTAL","M","1801 TRINITY PL. APT 19       ","
","CANTON              ","OH","447093355","3305809235","F","04121966","  "," "," "," ","
","05191997","S00010","01011999","H","6","DEM","01011999","01011999","Z","01011999","S","2 ","I","ATT","N"
V3.0"035791","03/01/1999 08:20:00","U","274882275","BIANCHI","ASHLEY","A","1519 32ND ST NE               ","
","CANTON              ","OH","447140000","3304541287","F","07131981","  "," "," "," ","
","04191998","S00010","10161998","H","5.9","MME","11011998","10161998","Z","02111999","S","0 ","V","PER","N"
V3.0"035791","03/01/1999 08:21:00","U","268689032","BOLTON","WILLIAM","L","2335 BROOKDALE DR. NW         ","
","CANTON
","OH","447090000","3304920386","M","10271961","AD","2","A","1","N","11101998","S00010","11161998","H","5.15","OTH","","",
"Z","01011999","M","0 ","V","FAM","N"
V3.0"035791","03/01/1999 08:21:00","U","302666185","CARMAN","DAWN","M","708 PROSPECT AVE SW           ","
","CANTON
","OH","447061246","3304533774","F","11251974","AD","5","A","1","N","01171999","S00010","01171999","H","5.15","
","","","Z","01011999","S","1 ","V","RET","N"
V3.0"035791","03/01/1999 08:22:00","U","235922065","DANISKA","CATHY","L","2112 ESTER AVE SW             ","
","CANTON
","OH","447060000","3304771639","F","10081971","AD","1","A","1","N","09221998","S00010","12161998","H","5.4","MME","010119
99","01011999","Z","01011999","M","0 ","V","PER","N"
```

Empty TE file content (version 2.0):

```
V2.0 marker
```

Empty TE file content (version 3.0):

```
V3.0 marker
```

TR – Transaction Info

TR files contain transaction records. This includes such information as rentals, sales, late fees.

TR records are categorized into three areas:

- Invoices
- Non-invoice information – Inventory, voids, and system info
- Roll-ups – summaries of common information

The structure is shown in Figure 28.

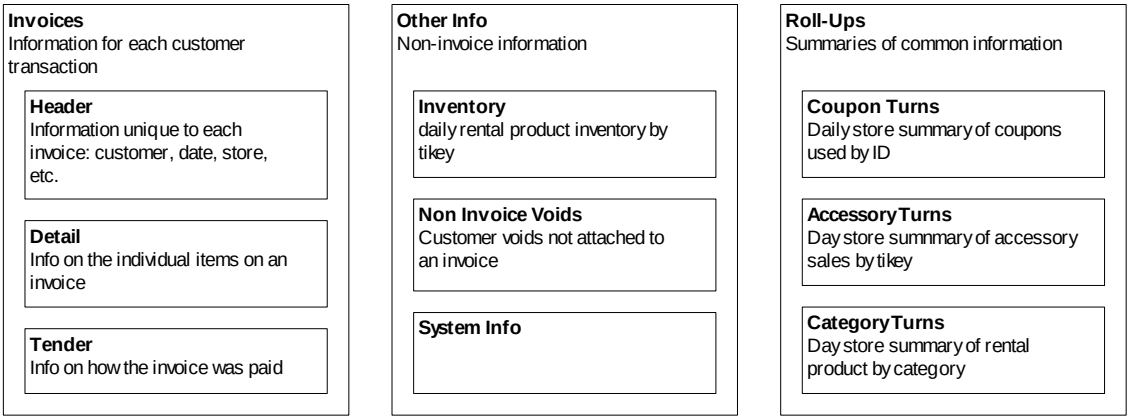

Figure 28. Contents of TR files

Transaction Codes:

CODE	Description
#	New member
1	Movie rotated in
2	Movie rotated out
3	Machine rotated in
4	Machine rotated out
5	Accessory rotated in
6	Accessory rotated out
A	Mov rental
B	Mach rental
c	Category change
C	Movie sale
D	Sell machine
E	Sell accessory
F	Late charge
G	Refund deposit
H	AR payment
I	Deposit

J	Cash refund
K	Cash pay-out
k	Rain check issued
L	Mv accessory sale
M	Mh accessory sale
n	Notes, memos & misc.
O	Mv usage SA.
p	Accessory purchase
P	Mh usage SA.
Q	Coupon
r	Pull rent sell\Poll report run
T	Tender
Z	Voided transaction
z	Zero rental new release
S	Rental credit on account

TX – Transaction info

This file contains similar transaction information to the `TR` file, and will eventually be modified to contain and replace all info in the `TR` file.

Example file structure:

```
#0003:0001:0001:19990414:013858
0125902652    00205252120083521999022416121999041318 47
0124685192    27616014230143021999031315241999041309 44
0117033733    10000848610143021999031315241999041309 44
0124686254    00000097360143021999031315241999041309 44
0121987379    00000008830143021999031315241999041309 37
0124832054    09999100890147351999031400021999041320 24
[…]
01S433527537  00205199010217931999041322041999041410 14
#0003:0001:0001:19990414:013858:000403
```

UT – Tax information

Example file structure:

```
0000000000
```

UU – UPC update file

Example file structure:

```
990122 UPCDATA.J1L  Total: 000041 Inserts: 000025 Updates: 000012 Deletes: 000004 Bad: 000000 End: 00
```

WS – Workstation Configuration

This ASCII file is generated and sent to Corporate on a daily basis, and is routed to TRON. It will eventually be shut off.

Example file structure:

```
WhichCPU V0.50 (c) by Michael Holin     //    Public Domain
WhichCPU ? for info

Looking for: 8088,8086,V20,V30,80188,80186,80286,80386sx,-dx,RapidCAD
             80486sx,-dx,-slc,-dlc,Pentium
CPU found  : Pentium
NPU found  : build in
Conventional Memory :

  Name               Size in Decimal       Size in Hex
-------------      --------------------   -------------
  MSDOS              18992      ( 18.5K)       4A30
  HIMEM               1120      (  1.1K)        460
  COMMAND             2768      (  2.7K)        AD0
  COMTOKEY           17232      ( 16.8K)       4350
  IPX                25392      ( 24.8K)       6330
  NETX               48624      ( 47.5K)       BDF0
  TIMECLK            11248      ( 11.0K)       2BF0
  FREE                  64      (  0.1K)         40
  FREE                  80      (  0.1K)         50
  FREE                  64      (  0.1K)         40
  FREE              528384      (516.0K)      81000

Total  FREE :       528592      (516.2K)

Total bytes available to programs :                          528592   (516.2K)
Largest executable program size :                            528240   (515.9K)

  14680064 bytes total contiguous extended memory
         0 bytes available contiguous extended memory
  14614528 bytes available XMS memory
           MS-DOS resident in High Memory Area
```

XN – Extra info

PC files contain XN contains closeout financial summaries and inventory “Q” data, such as accessories on-hand, customer records, and movie status. PC records are compartmentalized into these sub-files within the PC file:

- QA – Accessories on-hand
- QB – Active customer data
- QM – Movie inventory status
- QP – PO requests, acknowledgements, receiving
- QQ – Inventory summary (category, on-hand, lost, found)
- QT – Inventory transfers - system, data (in/out)

There are over 200 possible columns of info, however to save space, this is delivered as a flat file.

Example file structure: *(shown in three columns; actual file is one column):*

```
"STORE","037150"
"XDATE","01/22/1999"
"XTIME"," 3:09 am"
"VERSION","11.5"
"RENTALS","   5667.49"
"ACCESSORY_SALES","    872.12"
"LATE_CHARGES","    406.98"
"SALES_TAXES","      0.00"
"NET_OF_DEPOSITS_REFUNDS","    -29.99"
"ON_ACCOUNT","      0.00"
"CASH_AND_CHECKS","   5467.07"
"VISA_AND_MASTERCARD","   1251.36"
"AMERICAN_EXPRESS","     70.87"
"DISCOVER_CARD","     32.46"
"LABOR_HOURS","     43.16"
"LABOR_DOLLARS","    293.49"
"REGULAR_COUPONS","       107"
"OTHER_COUPONS","         0"
"MAILER_COUPONS","         0"
"NUMBER_OF_NEW_MEMBERS","        49"
"TEMPERATURE","        40"
"SKY","L"
"PRECIPITAION","R"
"COMMENT_LINE_1",""
"COMMENT_LINE_2",""
"RENT_LESS_90","   3885.85"
"RENT_90_365","     90.83"
"RENT_CATALOG","   1092.29"
"RENT_GENESIS","     15.44"
"RENT_NIN_8","     -2.01"
"RENT_NIN_16","     24.02"
"RENT_AUDIO","     17.16"
"RENT_LASER","      0.00"
"RENT_MACHINES","     19.98"
"SALE_NEW_MOVIES","    275.83"
"SALE_PV","    380.65"
"SALE_RENTRAK","      0.00"
"SALE_GAMES","      0.00"
"SALE_AUDIO","      0.00"
"SALE_MUSIC","      0.00"
"SALE_MACHINES","      0.00"
"SALE_BLANK","      0.00"
"SALE_CONCESSION","    135.67"
"SALE_OTHER","     79.97"
"GIFT_REDEEMED","    102.97"
"GIFT_SOLD","      0.00"
"RENT_COUPON","       107"
"RENT_COUPON_DOL","     96.94"
"MANAGERS","         1"
"OVER_SHORT","     -5.83"
"LATE_CHARGES_NO","       125"
"DEPOSIT_NO","         1"
"DEPOSIT_DOL","     10.00"
"SALE_REFUND","     -9.99"
"SALE_REFUND_NO","         1"
"DEPOSIT_REFUND_DOL","    -30.00"
"DEPOSIT_REFUND_NO","         3"
"CASH_PAYOUT_DOL","      0.00"
"CASH_PAYOUT_NO","         0"
"TOTAL_DISK_SPACE"," 256259584"
"AVAIL_DISK_SPACE"," 372965376"
"AVAIL_MGR_DISK_SPACE"," 169279488"
"TOTAL_MGR_DISK_SPACE","  87733760"
"RENT_NO_LESS_90","      1169"
"RENT_NO_90_365","        30"
"RENT_NO_CATALOG","       587"
"RENT_NO_GENESIS","         5"
"RENT_NO_NIN_8","         1"
"RENT_NO_NIN_16","         9"
"RENT_NO_AUDIO","         5"
"RENT_NO_LASER","         0"
"RENT_NO_MACHINES","         2"
"RENT_NO_NIN_64","        51"
"RENT_NIN_64","    239.52"
"RENT_NO_SONY_PS","        64"
"RENT_SONY_PS","    304.39"
"SALE_NO_NEW_MOVIES","        19"
"SALE_NO_PV","        35"
"SALE_NO_RENTRAK","         0"
"SALE_NO_GAMES","         0"
"SALE_NO_AUDIO","         0"
"SALE_NO_MUSIC","         0"
"SALE_NO_MACHINES","         0"
"SALE_NO_BLANK","         0"
"SALE_NO_CONCESSION","       106"
"SALE_NO_OTHER","         3"
"GIFT_NO_SOLD","         0"
"GIFT_NO_REDEEMED","        21"
"INVOICE_COUNT","       980"
"INVOICE_RENT_ONLY","       789"
"INVOICE_ACC_ONLY","        27"
"INV_MOVIES_0","       105"
"INV_MOVIES_1","       285"
"INV_MOVIES_2","       314"
"INV_MOVIES_3","       165"
"INV_MOVIES_4","        58"
"INV_MOVIES_5","        38"
"INV_MOVIES_6","        14"
"INV_MOVIES_7","         1"
"INV_MOVIES_8","         0"
"INV_MOVIES_9","         0"
"INV_MOVIES_10","         0"
"TAX_RENT","   6173.39"
"TAX_EXEMPT","      0.00"
"TAX_ACC_1","    860.15"
"TAX_ACC_2","      0.00"
"TAX_ACC_3","      0.00"
"TAX_ACC_4","      0.00"
"TAX_ACC_5","      0.00"
"TAX_ACC_6","      0.00"
"TAX_ACC_7","      0.00"
"TAX_ACC_8","      0.00"
"TAX_ACC_9","      0.00"
"TAX_ACC_10","      0.00"
"AUDIT_DEBIT_CREDIT","    -13.96"
"AUDIT_RENT","    -19.98"
"AUDIT_SALE","      0.00"
"AVG_DAYS_OUT_1","      3.00"
"AVG_DAYS_OUT_2","      0.00"
"AVG_DAYS_OUT_3","      0.00"
"AVG_DAYS_OUT_4","      0.00"
"AVG_DAYS_OUT_5","      5.06"
"AVG_RET_TIME_1","1919      "
"AVG_RET_TIME_2","0000      "
"AVG_RET_TIME_3","0000      "
"AVG_RET_TIME_4","0000      "
"AVG_RET_TIME_5","1723      "
"MAN_PRICE_DOL","     57.80"
"MAN_PRICE_NO","        20"
"AUDIT_DIFF","         0"
"SIGNUP_4_STARS","         0"
"SIGNUP_3_STARS","         0"
"SIGNUP_2_STARS","         0"
"SIGNUP_1_STAR","         0"
"PHONE_MEMBERS","         0"
"TOTAL_MEM_SRCH","       240"
"INVOICES_PRINTED","       241"
"EMPLOYEE_ID","SMGR "
"REFUND_EXCHANGE","      9.99"
"AUTH_ONLY_DOL","    130.00"
"AUTH_ONLY_NUM","         4"
"ITEM_LRC","080e"
"UPC_LRC","e189"
```

YE – Year-end inventory report

This file is received twice per year. There are no automated processes that are dependent on the content of this file.

Example file structure: *(shown in two columns; actual file is one column):*

```
00136754032  DR SOMETHING TO TALK ABOUT        N
0037019011   DI JUNGLE BOOK, THE (1994)        Y
0093420002   MC JUDDS, THE-FAREWELL TOUR       Y
0102587002   DR CRY FREEDOM                    Y
01029576001  DI TALES FROM AVONLEA VOL 4       Y
01032423003  CO MR. WRONG                      Y
[...]
#1 000005
#5 000005
#6 000005
#9 000005
AA 000189
AD 000959
AN 000086
BB 000001
BC 000003
BF 000183
BK 000002
BN 000002
BS 000016
CC 000046
CL 000394
CO 001216
CU 000090
DI 000166
DO 000159
DR 001066
DV 000219
EX 000048
FA 000267
FO 000175
FY 000045
G1 000385
G4 000046
HO 000454
IN 000044
KI 000619
MA 000094
MC 000097
MU 000090
MY 000297
N2 001822
N3 001076
N5 000003
RE 000044
S1 000647
SC 000306
SP 000094
TR 000048
WE 000198
TOTAL BOOKS: 000207
TOTAL GAMES: 001078
TOTAL NEW RELEASE: 002901
TOTAL MACHINES: 000020
TOTAL CATALOG: 007510
```

Appendix C. TR Data Model

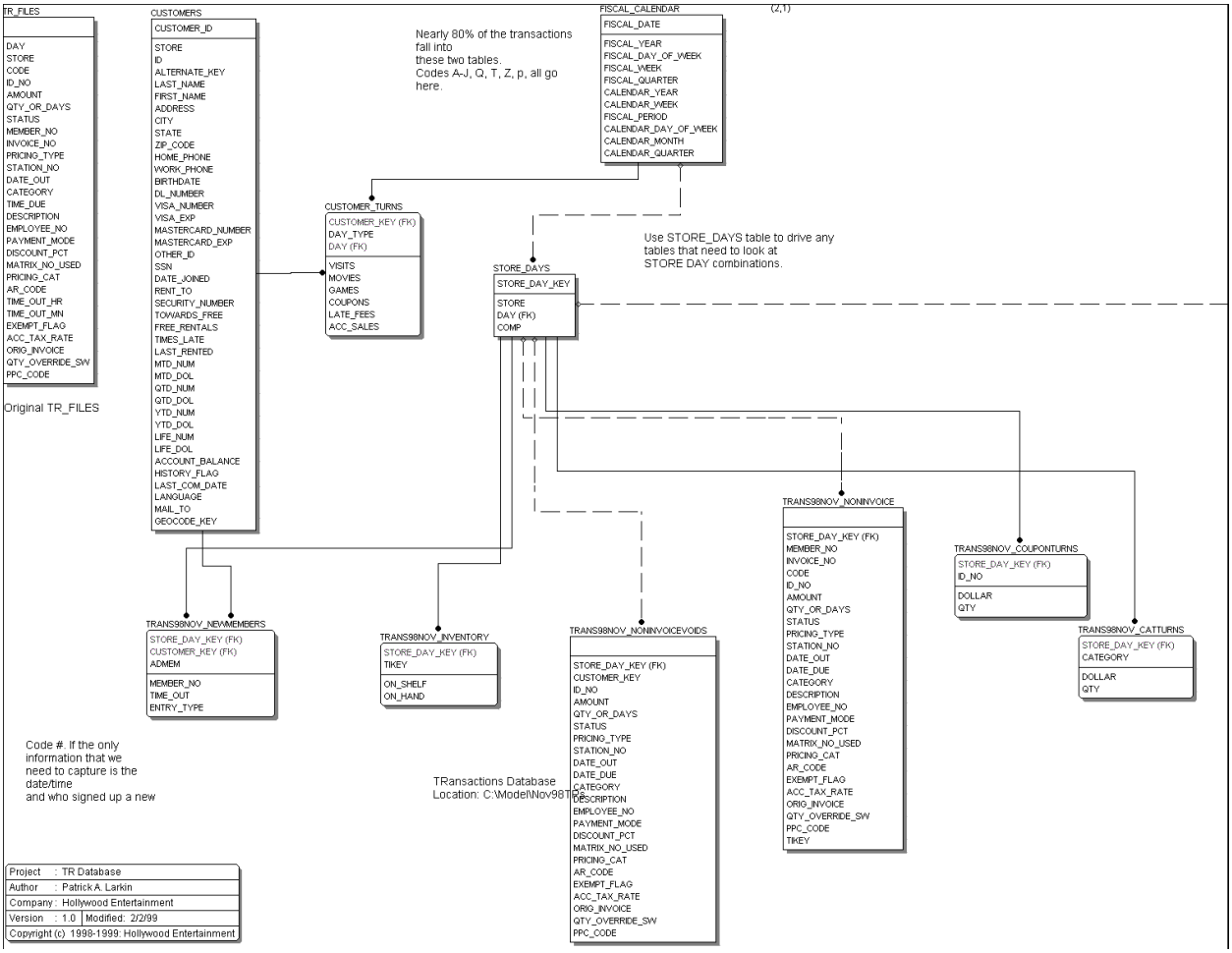

Figure 29. TR Data Model in Guardian (1 of 2)

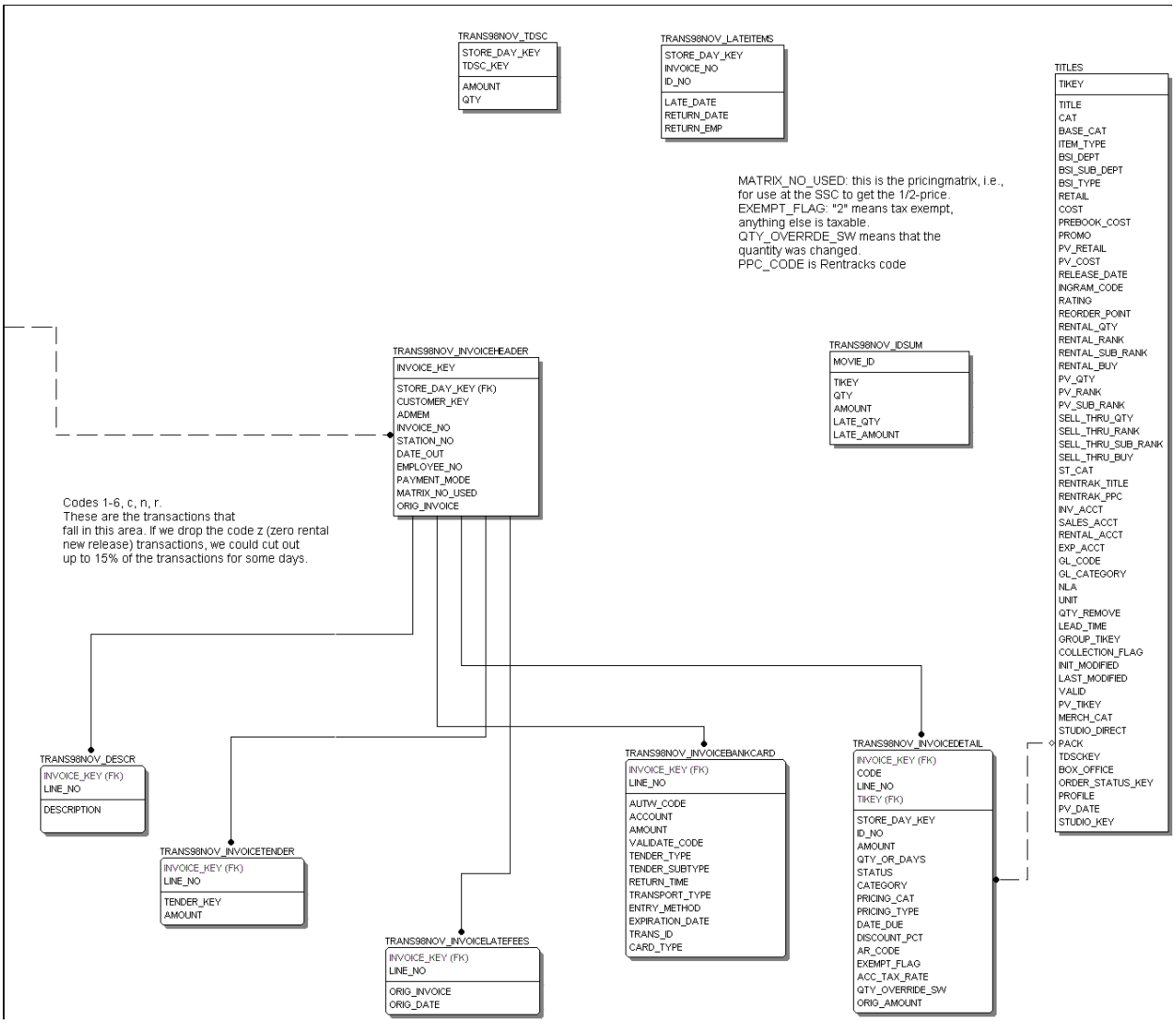

Figure 30. TR Data Model in Guardian (2 of 2)