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Software Solutions

FOR THE TELECOMMUNICATIONS INDUSTRY

CTS ALARM SOLUTION

Accommodates Multiple Sessions
Connects to Leading Switch Manufacturers
Long-Term Storage of Data Streams
Easy to Use Reports
Customizable Notification System

With over 20 years of experience in the telecommunications industry, Computerised Business Systems, Inc. creates software solutions which are aimed at adding value to our customer's business through increased productivity, profitability, growth and competitive advantage.



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CTS ALARM NOTIFICATION SERVER



The CTS Alarm Notification Server efficiently accepts traffic, maintenance and alarm data from the switch, stores and archives it, and provides quick retrieval for analysis as well as multiple forms of notification.

The customizable options allow for the creation of a system which works for each organization based on their own infrastructure. This can include multiple phases of implementation with alarms for not only switches but the influx of an Alcatel data stream and a sensor monitoring solution for remote sites.

The CTS Alarm Notification Server can be viewed locally or remotely for monitoring, and it provides a log history along with various maintenance reports. The alarms server also has the ability to not only display status messages but create a voice announcement and send a page or e-mail to multiple sources based on the type of alarm.

CBSi has the unique ability to customize an alarm solution for your organization which would provide the following features and benefits:

ALARM NOTIFICATION SERVER FEATURES AND BENEFITS

- Customizable to meet your organizations unique needs.
- User configurable notification system
 - E-mail
 - Spoken announcement
 - Numeric Pager
- Saves labor through easy to use detailed reports Events can be categorized by: date and time, priority and/or site.
- Display is suitable for use in an overhead system in a NOC center or other facility.
- Can monitor multiple systems simultaneously
- Decodes and stores switch stream.
- Text of last 50 alarms available for display.
- Designed to run continually without the need for user intervention.
- Remote access allows for easy upgrades and routine maintenance as well as enhanced troubleshooting.
- Implementation can be done in phases based on the customers needs and abilities.

CBSi welcomes the opportunity to:

- answer your questions
- design a specific configuration for your operations
- provide a quote

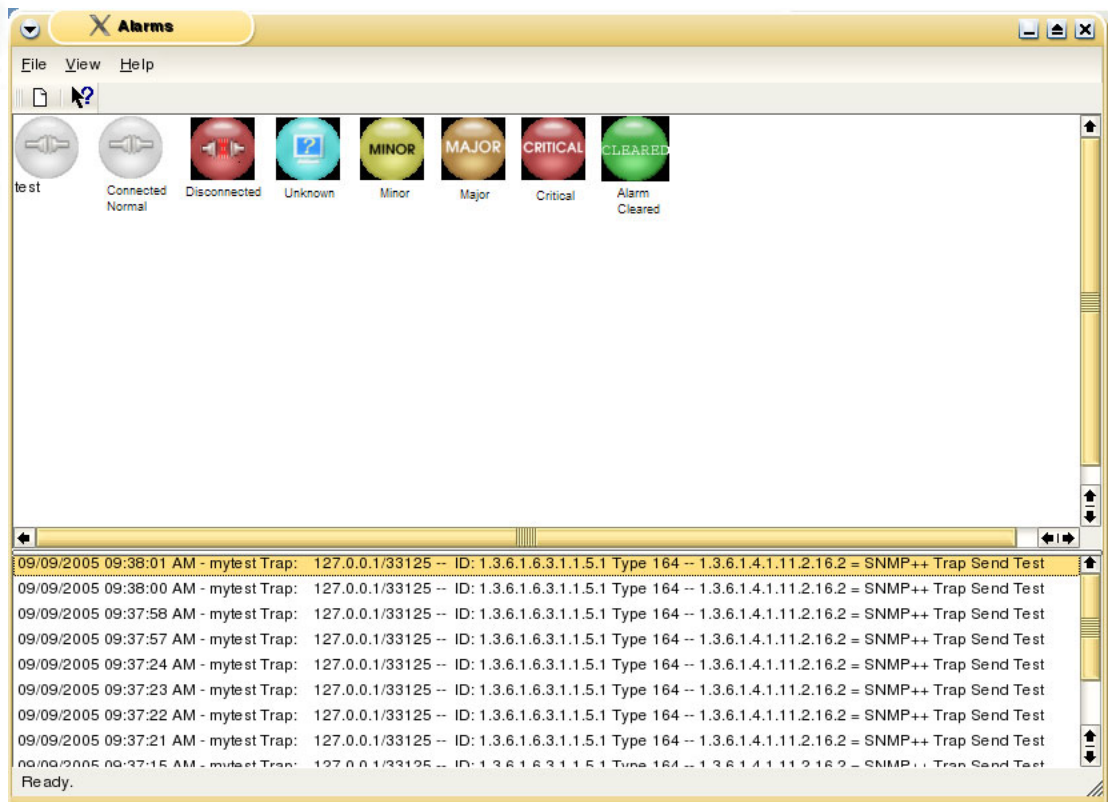
Contact CBSi:
800-895-5550 or
cbsi@cbsicom.com

For Linux operating systems

ALARM NOTIFICATION SERVER: DISPLAY

- Shows the alarm status of each switch with clearly recognizable icons
- Allows you to drill down to receive specific information on each alarm and/or information message.
- Display is suitable for use in an overhead system in a NOC center or other facility.

Sample screenshot of the Alarm Interface displaying various alarm levels:



Explanations of the different symbols on the Alarm Interface

- Red Circle: Critical Alarm
- Gold Circle: Major Alarm
- Yellow Circle: Warning
- Question Mark: Unknown Status
- Red pipe with X: Disconnected from Switch
- Pipe: Connected to Device
- Green Circle: Alarm was Cleared

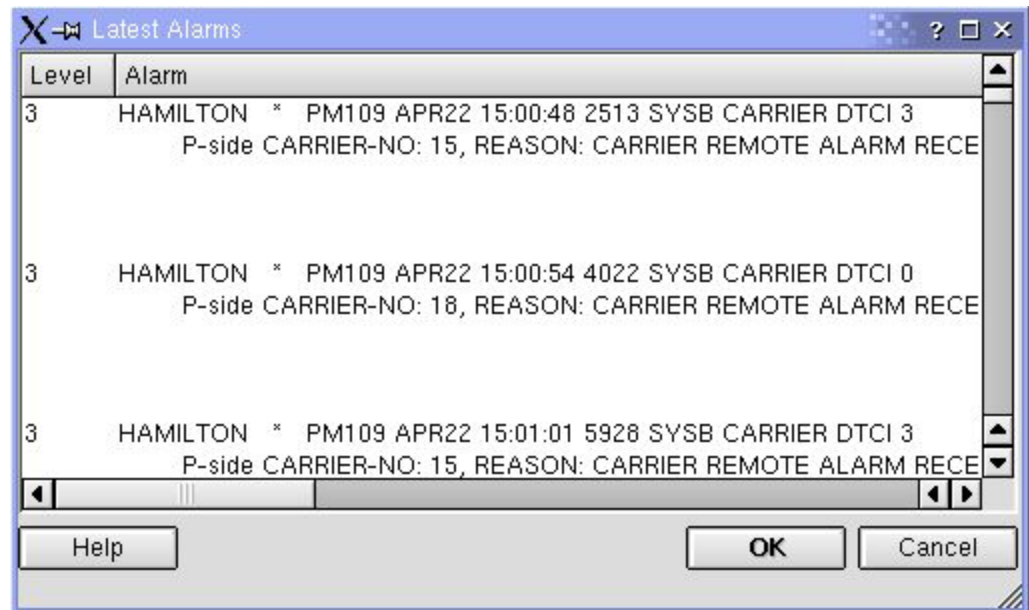


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ALARM NOTIFICATION SERVER: LATEST ALARMS

After receiving either an alert or viewing an on-screen notification, the user can then drill-down to receive more specific information. The actual switch message is shown, which is determined by the customer.

The level of the alarm is also customizable. It can be displayed as a number representing the Minor, Major and/or Critical alarms, or it can be the actual words Minor, Major and/or Critical.



The alarm display and latest alarms are all viewable on the Linux based Alarm Server. The interface is extremely user-friendly and can be customized to meet your organizations varied needs.

The CTS Alarm Solution also has the ability to handle a TTL/Digital Alarm Interface. This would monitor ATM, cabinet, door or other contact points. The contact points may be either N/O or N/C.



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ALARM NOTIFICATION SERVER: ALARM SEARCH

The Windows based client user may do a search for alarms using various criteria including:

- date
- time
- alarm status
- site/item
- equipment.

The screenshot shows the 'Untitled - AlarmSearch' application window. The search criteria are: Date: 6/ 3/2005, Time: 11, Alarm Status: >= Minor, Site/Item: Hamilton, and Equipment: (empty). The search results are displayed in a table with columns for Row, Status, and Alarm Text.

Row	Status	Alarm Text
1	MINOR	06/03/2005 11:05:27 AM - HAMILTON * PM125 APR22 15:00:45 1406 TBL PP-HARDWARE
2	MINOR	06/03/2005 11:05:29 AM - HAMILTON * PM109 APR22 15:00:48 2513 SYSB CARRIER DTCTI 3
3	MINOR	06/03/2005 11:05:29 AM - HAMILTON * PM128 APR22 15:00:48 2614 TBL ISTB DTCTI 3
4	MINOR	06/03/2005 11:05:33 AM - HAMILTON * PM109 APR22 15:00:54 4022 SYSB CARRIER DTCTI 0
5	MINOR	06/03/2005 11:05:33 AM - HAMILTON * PM128 APR22 15:00:54 4123 TBL ISTB DTCTI 0
6	MINOR	06/03/2005 11:05:35 AM - HAMILTON * PM109 APR22 15:01:01 5928 SYSB CARRIER DTCTI 3
7	MINOR	06/03/2005 11:05:35 AM - HAMILTON * TRK164 APR22 15:01:05 6629 INFO CALLING LINE IDENT
8	MAJOR	06/03/2005 11:05:36 AM - HAMILTON ** ISDN111 APR22 15:01:09 7533 INFO PRA D-CHANNEL MAJOR ALARM
9	MINOR	06/03/2005 11:05:38 AM - HAMILTON * PM109 APR22 15:01:22 9739 SYSB CARRIER DTCTI 3
10	MAJOR	06/03/2005 11:05:38 AM - HAMILTON ** TRK102 APR22 15:01:23 0140 FLT GROUP_ALARM INTER_CWT 80% BUSY
11	MINOR	06/03/2005 11:05:38 AM - HAMILTON * PM109 APR22 15:01:40 2741 SYSB CARRIER DTCTI 3
12	MINOR	06/03/2005 11:05:40 AM - HAMILTON * TRK164 APR22 15:01:48 3846 INFO CALLING LINE IDENT
13	MINOR	06/03/2005 11:05:40 AM - HAMILTON * PM109 APR22 15:01:50 4249 SYSB CARRIER DTCTI 3
14	MAJOR	06/03/2005 11:05:41 AM - HAMILTON ** TRK102 APR22 15:01:59 5854 FLT GROUP_ALARM XLREINSPRI2 13% BUSY
15	MINOR	06/03/2005 11:05:42 AM - HAMILTON * PM110 APR22 15:02:03 7056 INFO CARRIER DTC 9
16	MINOR	06/03/2005 11:05:43 AM - HAMILTON * TRK164 APR22 15:02:17 1661 INFO CALLING LINE IDENT
17	CRITICAL	06/03/2005 11:05:44 AM - HAMILTON *** ISDN112 APR22 15:02:24 2866 INFO PRA D-CHANNEL CRITICAL ALARM
18	CRITICAL	06/03/2005 11:05:46 AM - HAMILTON *** TRK103 APR22 15:02:34 3870 FLT GROUP_ALARM XLREINSPRI2 100% BUSY
19	MINOR	06/03/2005 11:05:49 AM - HAMILTON * PM109 APR22 15:03:00 9381 SYSB CARRIER DTCTI 3
20	CRITICAL	06/03/2005 11:05:49 AM - HAMILTON *** TRK103 APR22 15:03:07 3583 FLT GROUP_ALARM XLREINSPRI2 100% BUSY
21	MINOR	06/03/2005 11:05:49 AM - HAMILTON * PM110 APR22 15:03:11 4384 INFO CARRIER DTC 5
22	MINOR	06/03/2005 11:05:52 AM - HAMILTON * PM125 APR22 15:03:35 8994 TBL PP-HARDWARE
23	MAJOR	06/03/2005 11:05:52 AM - HAMILTON ** TRK102 APR22 15:03:40 9495 FLT GROUP_ALARM INTER_CWT 80% BUSY
24	MINOR	06/03/2005 11:05:52 AM - HAMILTON * PM109 APR22 15:03:41 9596 SYSB CARRIER DTCTI 3
25	MINOR	06/03/2005 11:05:53 AM - HAMILTON * PM125 APR22 15:03:46 0500 TBL PP-HARDWARE
26	MAJOR	06/03/2005 11:05:53 AM - HAMILTON ** TRK102 APR22 15:03:48 1301 FLT GROUP_ALARM XLREINSPRI2 13% BUSY
27	CRITICAL	06/03/2005 11:05:54 AM - HAMILTON *** TRK103 APR22 15:03:54 2503 FLT GROUP_ALARM XLREINSPRI2 100% BUSY
28	MINOR	06/03/2005 11:05:54 AM - HAMILTON * PM109 APR22 15:03:56 3504 SYSB CARRIER DTCTI 3
29	MINOR	06/03/2005 11:05:55 AM - HAMILTON * PM125 APR22 15:04:06 4906 TBL PP-HARDWARE
30	MINOR	06/03/2005 11:05:55 AM - HAMILTON * PM128 APR22 15:04:09 5508 TBL ISTB LCM HGRO 00 0
31	MINOR	06/03/2005 11:05:56 AM - HAMILTON * PM109 APR22 15:04:12 5910 SYSB CARRIER DTCTI 3
32	MINOR	06/03/2005 11:05:56 AM - HAMILTON * PM109 APR22 15:04:21 6912 SYSB CARRIER DTCTI 0
33	CRITICAL	06/03/2005 11:05:56 AM - HAMILTON *** ISDN112 APR22 15:04:23 7613 INFO PRA D-CHANNEL CRITICAL ALARM



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ALARM NOTIFICATION SERVER: REPORTS

The CTS Alarm Solution has a number of informational reports which can be customized to meet the needs of the user. More reports are being added every day based on customer input!

5 HIGH ALARM COUNTS REPORT

AlarmReport - [AlarmR7]				
File Reports View Window Help				
Site	Equipment	Status	# of Alarms	
Hamilton	PM109	MINOR	378	
	TRK103	CRITICAL	273	
	TRK102	MAJOR	224	
	PM125	MINOR	203	
	DFIL617	MINOR	161	

7 DAY EQUIPMENT ALARM REPORT

AlarmReport - [AlarmR10]											
File Reports View Window Help											
Site	Equipment	Status	04/22/2005	04/23/2005	04/24/2005	04/25/2005	04/26/2005	04/27/2005	04/28/2005		
Hamilton	AUDT105	MINOR	1				No data	No data	No data	No data	
	CARR811	MINOR	36	18	9						
	DFIL617	MINOR	92	46	23						
	ENCP101	MINOR	1								
	EGAC600	MAJOR	1								
	ISDN105	MINOR	24	12	6						
	ISDN111	MAJOR	16	8	4						
	ISDN112	CRITICAL	76	38	19						
	ISDN118	MINOR	1								
	DM2200	MAJOR	4	2	1						
	PM106	MINOR	1								
	PM109	MINOR	216	108	54						
	PM110	MINOR	16	8	4						
	PM111	MINOR	1								
	PM125	MINOR	116	58	29						
	PM128	MINOR	56	28	14						
	PM179	MINOR	4	2	1						
	TRK101	MINOR	28	14	7						
	TRK102	MAJOR	128	64	32						
	TRK103	CRITICAL	166	78	39						
	TRK163	MINOR	4	2	1						
	TRK164	UNKNOWN	1	2	1						
	TRK164	MINOR	35	16	8						

ALARM SUMMARY BY DATE REPORT

AlarmReport - [AlarmR6]							
File Reports View Window Help							
Date	Site	# Unknown	# Minor	# Major	# Critical	# Cleared	
04/22/2005	Hamilton	1	632	149	232		
04/23/2005	Hamilton	2	312	74	118		
04/24/2005	Hamilton	1	156	37	58		



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ALARM DETAIL REPORT

AlarmReport - [Alarm Detail]				
Site	Equipment	Status	Alarm Detail	
Hamilton	TRK164	MINOR	HAMILTON * TRK164 APR22 15:00:42 0801 INFO CALLING LINE IDENT INCOMING TRUNK = CKT HAMPRINP1 14 OUTGOING TRUNK = CKT POLICEPRIA 3 CALLED NUMBER = 2950011 CALLID=	
	PM125	MINOR	HAMILTON * PM125 APR22 15:00:46 1406 TBL PP-HARDWARE LM HOST02 1 REASON: PP TRAP RAM PARITY ERROR - CTRL CARD: 2X26 CT=0049 RG=8B91 1083 E216 83E3 SP=AFEE RA=8BF2 PS=0000	
	CARR811	MINOR	HAMILTON * CARR811 APR22 15:00:47 1708 TBL CARRIER SPM 0 CKT: 144 CarrName: SPM_0_STS1P_02_VT15P_22_DS1P_01 Carrier: STS1P 2_VT15P 13_DS1P 1 CSS-N Threshold Crossing Alert: 1 Accumulation	
	DFIL617	MINOR	HAMILTON * DFIL617 APR22 15:00:48 2311 INFO MISSING DATAFILL CKT INTER_CWT 20 Default CGN missing in table LTDATA Called DR = 4412962478	
	CARR811	MINOR	HAMILTON * CARR811 APR22 15:00:48 2412 TBL CARRIER SPM 1 CKT: 122 CarrName: SPM_1_STS1P_01_VT15P_28_DS1P_01 Carrier: STS1P 1_VT15P 28_DS1P 1 CSS-N Threshold Crossing Alert: 1 Accumulation	
	PM109	MINOR	HAMILTON * PM109 APR22 15:00:48 2513 SYSB CARRIER DTCI 3 P-side CARRIER-NO: 15, REASON: CARRIER REMOTE ALARM RECEIVED	
	PM128	MINOR	HAMILTON * PM128 APR22 15:00:48 2614 TBL ISTB DTCI 3 Node : ISTb (PSLink OOS) From InSv Unit0 Inact: InSv Unit1 Act: InSv	
	PM109	MINOR	HAMILTON * PM109 APR22 15:00:54 4022 SYSB CARRIER DTCI 0 P-side CARRIER-NO: 18, REASON: CARRIER REMOTE ALARM RECEIVED	
	PM128	MINOR	HAMILTON * PM128 APR22 15:00:54 4123 TBL ISTB DTCI 0 Node : ISTb (PSLink OOS) From InSv Unit0 Inact: InSv Unit1 Act: InSv	

Ready

ALARM SUMMARY REPORT

AlarmReport - [AlarmR4]						
Site	# Unknown	# Minor	# Major	# Critical	# Cleared	
NM5620	No data					
Hamilton	4	1100	260	406		
Paget	No data					



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EQUIPMENT ALARM SUMMARY REPORT

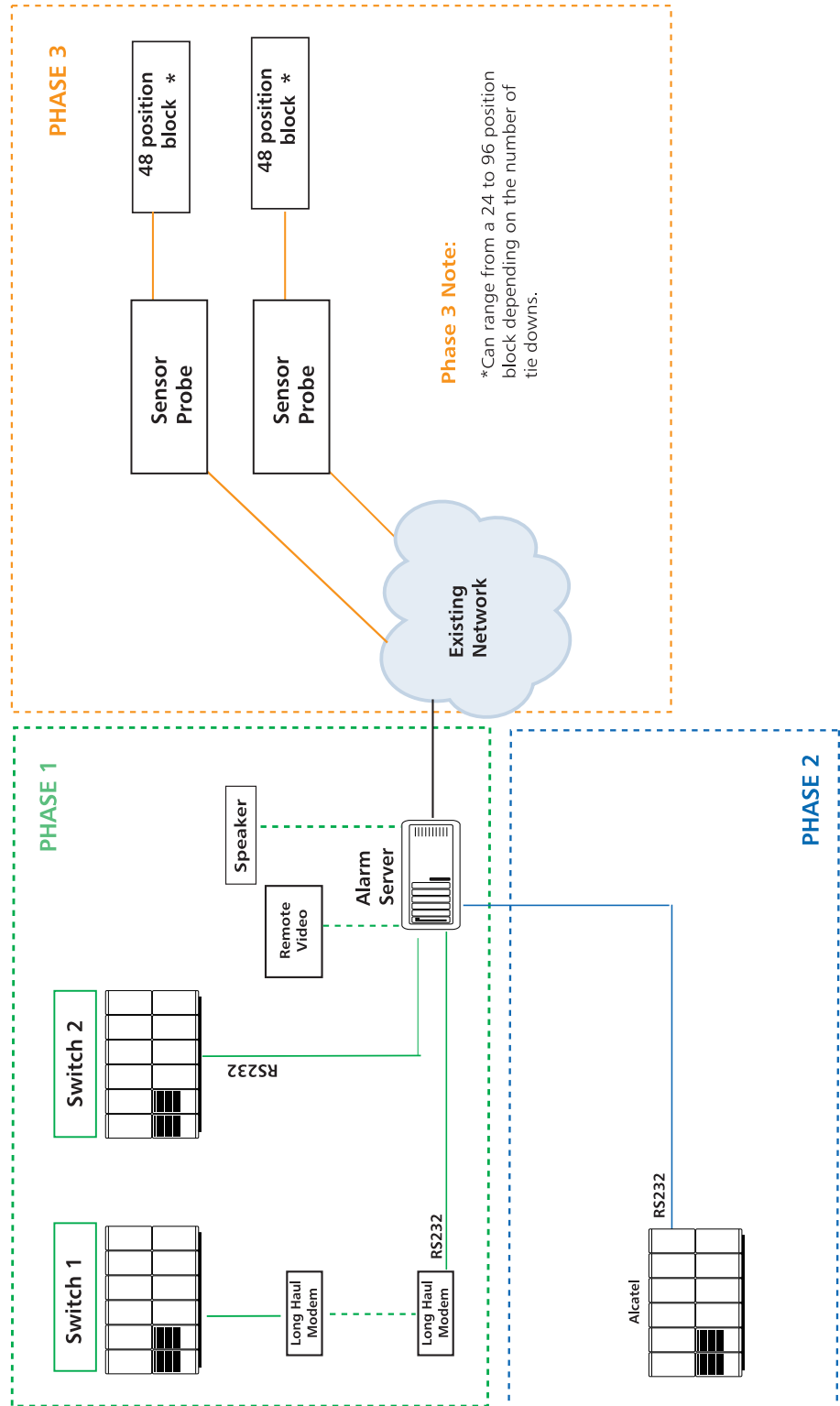
AlarmReport - [AlarmR8]				
File Reports View Window Help				
Site	Equipment	Status	# of Alarms	
NM5620	No data			
Hamilton	AUDT105	MINOR	1	
	CARR811	MINOR	63	
	DFIL617	MINOR	161	
	ENCP101	MINOR	1	
	EQAC600	MAJOR	1	
	ISDN105	MINOR	42	
	ISDN111	MAJOR	28	
	ISDN112	CRITICAL	133	
	ISDN118	MINOR	1	
	OM2200	MAJOR	7	
	PM106	MINOR	1	
	PM109	MINOR	378	
	PM110	MINOR	28	
	PM111	MINOR	1	
	PM125	MINOR	203	
	PM128	MINOR	98	
PM179	MINOR	7		
TRK101	MINOR	49		
TRK102	MAJOR	224		
TRK103	CRITICAL	273		
TRK163	MINOR	7		
TRK164	UNKNOWN	4		
TRK164	MINOR	59		
Paget	No data			

LIST OF EQUIPMENT WITH ERRORS REPORT

AlarmReport - [AlarmR13]		
File Reports View Window Help		
Site	Equipment	
Hamilton	AUDT105	
	CARR811	
	DFIL617	
	ENCP101	
	EQAC600	
	ISDN105	
	ISDN111	
	ISDN112	
	ISDN118	
	OM2200	
	PM106	
	PM109	
PM110		
PM111		

CTS ALARM SOLUTION SAMPLE SCHEMATIC - USING EXISTING NETWORK

- Implementation can be done in phases based on the customers needs and abilities.



CTS ALARM SOLUTION SAMPLE SCHEMATIC - USING PRIVATE NETWORK

- Implementation can be done in phases based on the customers needs and abilities.

