



***Knowledge Base Article***

**ISONAS Crystal Matrix  
Time & Attendance Support**

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## Document Version ( KBA0100TimeAccounting.Doc )

Date of Revision	Revision	Author	Description
10/19/2008	1.0	Shirl Jones	Initial Release

# 1: INTRODUCTION

The ISONAS Access Control System can be used to capture and export Time and Attendance data. There are two methods available to capture the Attendance data. Either method can generate both printable reports, and data files which can easily be imported into other applications.

## **1.1: METHOD 1 ---FIRST & LAST ACTIVITY DURING A DAY:**

When this data capture/reporting method is used, the Crystal Matrix software will review the historical data, and generate data based on the 1<sup>st</sup> time a person used their credentials during a calendar day, and the last time that person's credentials were used.

Advantages:

1. Convenience: Employees can use any reader-controller in the system to clock in/out.
2. Easy to implement: Does not require certain readers to be designated "In" or "Out"

Disadvantages:

1. Shifts that span Midnight are not reported as desired.
2. Does not handle "Split Shift" work schedules. An example of a Split Shift would be an employee who works 07:00 – 10:00 and then 14:00 – 19:00 in a single day.

## **1.2: METHOD 2 -- BADGING IN & OUT AT SELECTED READERS:**

When this data capture/reporting method is used, selected reader-controller(s) are used to "clock in" at the beginning of the employee's shift, and then at the end of their work, selected "out" reader-controller(s) are used to "clock out".

When the Attendance Reports are run, the elapsed times between "clock in" and "clock out" events are reported.

Advantages:

1. Employee's time records correctly account for multiple shifts during a day, or shifts that span midnight

Disadvantages:

1. The installation's project planning must account for some readers to be designated as "In" and "Out" readers.
2. Some installations need to have dedicated readers for the "clock in" and "clock out" functions.

## 2: IMPLEMENTATION

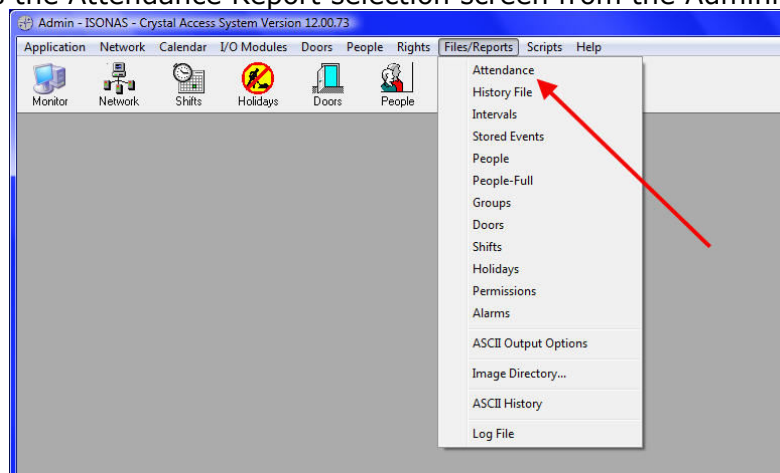
### 2.1: FIRST & LAST ACTIVITY METHOD:

#### 2.1.1: CONFIGURATION:

There is no special system configuration required to use this method of attendance reporting.

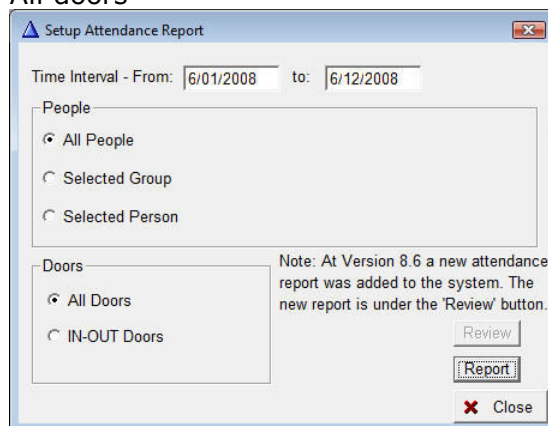
#### 2.1.2: REPORTING:

Access the Attendance Report selection screen from the Administration application.



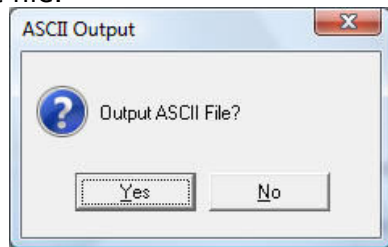
When the Attendance Report selection window appears, enter the following:

- Time Interval of interest
- Selection of personnel of interest (All, selected Group, or selected Person)
- All doors



Click on the "Report" button.

If data is to be exported to another system, answer "Yes" to create the ASCII data output file.



The system's default handling of the output file can be configured thru the Administrator's Main Menu → Files/Reports → ASCII Output options selection.

The printable attendance report appears:

Run: 10/15/08 1:57PM		Crystal Access System			
		Attendance Report			
		6/01/2008 to 6/14/2008			
		All People			
		All Doors			
ID	Name	Start	End	Time	
6/10/2008					
auto_26	AUX,	0:00:00	0:00:00	0:00:00	
auto_92	Adams, Kelly	8:01:06	18:31:40	10:30:33	
auto_93	Alcott, Dave	0:00:00	0:00:00	0:00:00	
auto_94	Allan, Brian	8:01:02	17:29:43	9:28:41	
auto_95	Almond, Peggy	8:00:55	17:29:48	9:28:53	
auto_25	REX,	12:45:29	23:59:59	11:14:30	
auto_23	Smith, Greg	8:00:58	16:55:37	8:54:38	
6/11/2008					
auto_26	AUX,	0:00:00	0:00:00	0:00:00	
auto_92	Adams, Kelly	7:50:17	17:01:16	9:10:59	
auto_93	Alcott, Dave	0:00:00	0:00:00	0:00:00	
auto_94	Allan, Brian	7:50:08	15:30:18	7:40:10	
auto_95	Almond, Peggy	7:50:15	17:01:13	9:10:58	
auto_25	REX,	0:00:00	0:00:00	0:00:00	
auto_23	Smith, Greg	10:30:18	14:01:25	3:31:06	
6/12/2008					
auto_26	AUX,	0:00:00	0:00:00	0:00:00	
auto_92	Adams, Kelly	8:00:28	15:29:41	7:29:13	
auto_93	Alcott, Dave	0:00:00	0:00:00	0:00:00	
auto_94	Allan, Brian	8:00:30	15:29:49	7:29:18	
auto_95	Almond, Peggy	8:00:38	15:29:36	7:28:58	
auto_25	REX,	0:00:00	0:00:00	0:00:00	
auto_23	Smith, Greg	8:00:35	15:29:45	7:29:10	

Once the printable report window is closed, the ASCII report is created and displayed.

```

Report.txt - Notepad
File Edit Format View Help
Attendance Report 6/01/2008 to 6/20/2008 All People All Doors
6/10/2008
auto_7      ,"AUTO_UNLOCK,"      ", 0:00:00, 0:00:00, 0:00:00
auto_26     ,"AUX,"               ", 0:00:00, 0:00:00, 0:00:00
auto_92     ,"Adams, Kelly"       ", 8:01:06,18:31:40,10:30:33
auto_93     ,"Alcott, Dave"       ", 0:00:00, 0:00:00, 0:00:00
auto_94     ,"Allan, Brian"       ", 8:01:02,17:29:43, 9:28:41
auto_95     ,"Almond, Peggy"     ", 8:00:55,17:29:48, 9:28:53
auto_8      ,"BADGE_UNLOCK,"     ", 0:00:00, 0:00:00, 0:00:00
auto_25     ,"REX,"               ", 0:00:00, 0:00:00, 0:00:00
auto_23     ,"Smith, Greg"        ", 8:00:58,16:55:37, 8:54:38
auto_9      ,"UNLOCK_INTERVAL,"  ", 0:00:00, 0:00:00, 0:00:00
6/11/2008
auto_7      ,"AUTO_UNLOCK,"      ", 0:00:00, 0:00:00, 0:00:00
auto_26     ,"AUX,"               ", 0:00:00, 0:00:00, 0:00:00
auto_92     ,"Adams, Kelly"       ", 7:50:17,17:01:16, 9:10:59
auto_93     ,"Alcott, Dave"       ", 0:00:00, 0:00:00, 0:00:00
auto_94     ,"Allan, Brian"       ", 7:50:08,15:30:18, 7:40:10
auto_95     ,"Almond, Peggy"     ", 7:50:15,17:01:13, 9:10:58
auto_8      ,"BADGE_UNLOCK,"     ", 0:00:00, 0:00:00, 0:00:00
auto_25     ,"REX,"               ", 0:00:00, 0:00:00, 0:00:00
auto_23     ,"Smith, Greg"        ",10:30:18,14:01:25, 3:31:06
auto_9      ,"UNLOCK_INTERVAL,"  ", 0:00:00, 0:00:00, 0:00:00
6/12/2008
auto_7      ,"AUTO_UNLOCK,"      ", 0:00:00, 0:00:00, 0:00:00
auto_26     ,"AUX,"               ", 0:00:00, 0:00:00, 0:00:00
auto_92     ,"Adams, Kelly"       ", 8:00:28,15:29:41, 7:29:13
auto_93     ,"Alcott, Dave"       ", 0:00:00, 0:00:00, 0:00:00
auto_94     ,"Allan, Brian"       ", 8:00:30,15:29:49, 7:29:18
auto_95     ,"Almond, Peggy"     ", 8:00:38,15:29:36, 7:28:58

```

The default name of the text file is report.txt, and it will be found in the LiveDB subdirectory. From this screen, it can be saved to any location you wish.

The data is grouped on a daily basis, and the field included are:

- The Person's "Unique ID"
- The Person's Name
- The Starting time for that day
- The Ending time for that day
- The Elapsed time worked for that day.

## 2.2: BADGE “IN” & “OUT” METHOD:

### 2.2.1: CONFIGURATION:

The access control system will be configured to identify those reader-controllers that are used to “clock-in” and “clock-out” personnel.

This is done on the “Door Detail” window.

Record Will Be Changed

Door Name: Atlanta\_In Area: COMMON

Description: demo unit Controller ID: 1 (Always = 1 except for Serial units)

Port: 10001

I/O Group: I/O Group Model: RC-01

Network Timeout: 20

Host: Local Local Special Badges Serial Port Microcode

Monitor Authority Level required: 0

Latch Interval (sec): 1

☐ Clear Alarm on Authorized Open

Admit: ☐ Beep ☐ TTL1 ☐ TTL2 ☐ w/o unlatch

Reject: ☒ Beep ☐ TTL1 ☐ TTL2

REX Input: ☐ Disable ☒ Use REX DB ☐ w/o unlatch ☐ ALARM ☐ LOCKDOWN

AUX Input: ☒ Disable ☐ Use AUX DB ☐ w/o unlatch ☐ ALARM ☐ LOCKDOWN

Alarms: Unauthorized Open Extended Open Tamper

☒ Disable ☐ Beep ☐ TTL1 ☐ TTL2

☒ Disable ☐ Beep ☐ TTL1 ☐ TTL2

☒ Disable ☐ Beep ☐ TTL1 ☐ TTL2

Delay (sec): 0 Interval (sec): 60 Count: 0

Mode of Operation: ☐ LOCAL ☒ HOST ☐ STANDALONE ☐ DISABLE

Direction: ☐ Unspecified ☒ In ☐ Out ☐ In/Out (toggle)

Time & Attendance Settings

OK Cancel

A reader-controller can be:

- An “In” reader, where people clock-in at the start their shift

- An “Out” reader, where people clock-out at the end of their shift

- A “Toggle” reader, where a person’s 1<sup>st</sup> card presentation “clocks them in”, and the next card presentation will “clock them out”.

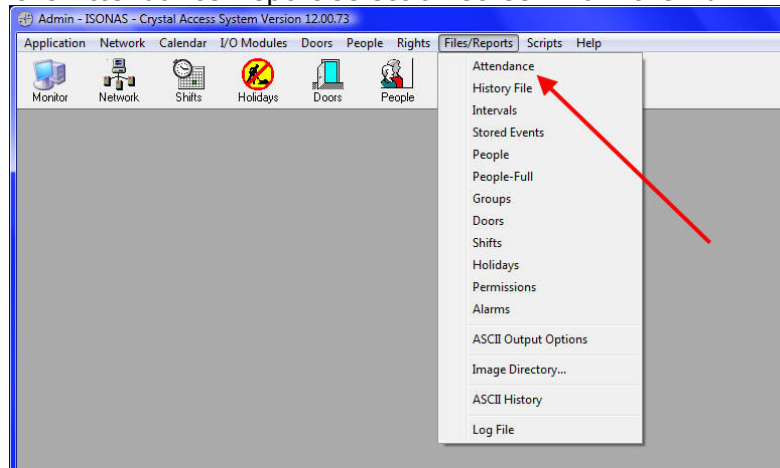
Any activity recorded at an “Unspecified” reader is ignored by the Time and Attendance features of the access control system.

Some installations are physically designed to have doors which are specifically used when their employees are entering for work, and likewise doors that are used when the employee are finished. For these sites, the reader-controller’s used to generate Time and Attendance data may also control the associated doors.

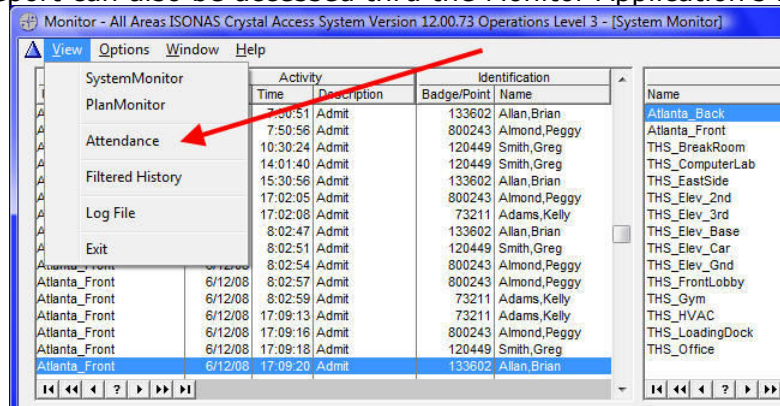
Other sites will install dedicated reader-controllers at “timeclock stations” where the employee’s clock-in and clock-out. This is advantageous if the employees can enter and leave the facility during their normal work-shift.

## 2.2.2: REPORTING:

Access the Attendance Report selection screen from the Administration application.

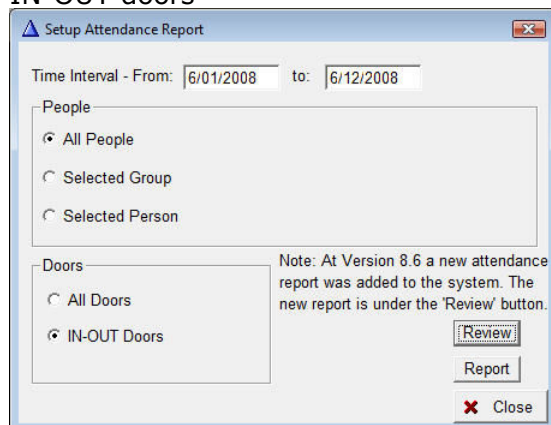


This report can also be accessed thru the Monitor Application's menu.



When the Attendance Report selection window appears, enter the following:

- Time Interval of interest
- Selection of personnel of interest (All, selected Group, or selected Person)
- IN-OUT doors





Click on the “Review” button.

### 2.2.2.1 ATTENDANCE DATA REVIEW:

When the Badging In/Out Time Accounting method is used, the system expects there to be a matching number of "badge in" and "badge out" activities. And it expects those activities to alternate.

If a user forgets to badge in-or-out, or accidentally badges in-or-out twice, a manual correction to their time history entries is required.

The Review Attendance window will highlight any people who have inconsistent attendance history records.

Employee ID	Name	Reg	OT	Sat	Sun	Hol	Total
auto_92	Adams Kelly	25.90	0.00	0.00	0.00	0.00	25.90
auto_93	Alcott Dave	0.00	0.00	0.00	0.00	0.00	0.00
auto_94	Allan Brian	40.00	13.71	11.02	5.02	0.00	53.71
auto_95	Almond Peggy	24.86	0.00	0.00	0.00	0.00	24.86
auto_26	AUX	0.00	0.00	0.00	0.00	0.00	0.00
auto_25	REX	0.00	0.00	0.00	0.00	0.00	0.00
auto_23	Smith Greg	19.92	0.00	0.00	0.00	0.00	19.92

Door Name	Date	Time
IN Atlanta_In	6/10/08	8:01AM
OUT Atlanta_Out	6/10/08	11:29AM
IN Atlanta_In	6/10/08	12:45PM
OUT Atlanta_Out	6/10/08	6:31PM
IN Atlanta_In	6/11/08	7:50AM
OUT Atlanta_Out	6/11/08	5:01PM
IN Atlanta_In	6/12/08	8:00AM
OUT Atlanta_Out	6/12/08	3:29PM

Selected Entry/Exit  
Server ID: 01  
Sub Net: 192.168.0.191  
Controller ID: 1  
Regular Hours: 40.00

In our example shown, Peggy Almond's entry is highlighted in yellow, indicating that her attendance records have an inconsistency.

Selecting her record, the details are shown on the right of the window.  
A quick review shows that she badged-in twice on the morning of June 12<sup>th</sup>.

**Review Attendance**

Employee ID	Name	Reg	OT	Sat	Sun	Hol	Total
auto_92	Adams Kelly	25.90	0.00	0.00	0.00	0.00	25.90
auto_93	Alcott Dave	0.00	0.00	0.00	0.00	0.00	0.00
auto_94	Allan Brian	40.00	13.71	11.02	5.02	0.00	53.71
auto_95	Almond Peggy	24.86	0.00	0.00	0.00	0.00	24.86
auto_26	AUX	0.00	0.00	0.00	0.00	0.00	0.00
auto_25	REX	0.00	0.00	0.00	0.00	0.00	0.00
auto_23	Smith Greg	19.92	0.00	0.00	0.00	0.00	19.92

	Door Name	Date	Time
IN	Atlanta_In	6/10/08	8:00AM
OUT	Atlanta_Out	6/10/08	11:29AM
IN	Atlanta_In	6/10/08	12:46PM
OUT	Atlanta_Out	6/10/08	5:29PM
IN	Atlanta_In	6/11/08	7:50AM
OUT	Atlanta_Out	6/11/08	5:01PM
IN	Atlanta_In	6/12/08	8:00AM
IN	Atlanta_In	6/12/08	8:00AM
OUT	Atlanta_Out	6/12/08	3:29PM

Selected Entry/Exit  
 Server ID: 01  
 Sub Net: 192.168.0.191  
 Controller ID: 1

Regular Hours: 40.00

☒ Export TimeData.CSV

One of the June 12<sup>th</sup> entries is selected, and the delete button is used.

**Review Attendance**

Employee ID	Name	Reg	OT	Sat	Sun	Hol	Total
auto_92	Adams Kelly	25.90	0.00	0.00	0.00	0.00	25.90
auto_93	Alcott Dave	0.00	0.00	0.00	0.00	0.00	0.00
auto_94	Allan Brian	40.00	13.71	11.02	5.02	0.00	53.71
auto_95	Almond Peggy	24.86	0.00	0.00	0.00	0.00	24.86
auto_26	AUX	0.00	0.00	0.00	0.00	0.00	0.00
auto_25	REX	0.00	0.00	0.00	0.00	0.00	0.00
auto_23	Smith Greg	19.92	0.00	0.00	0.00	0.00	19.92

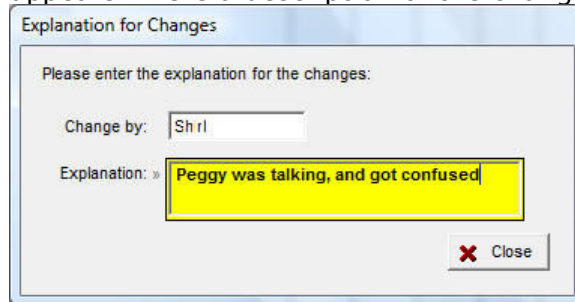
	Door Name	Date	Time
IN	Atlanta_In	6/10/08	8:00AM
OUT	Atlanta_Out	6/10/08	11:29AM
IN	Atlanta_In	6/10/08	12:46PM
OUT	Atlanta_Out	6/10/08	5:29PM
IN	Atlanta_In	6/11/08	7:50AM
OUT	Atlanta_Out	6/11/08	5:01PM
IN	Atlanta_In	6/12/08	8:00AM
IN	Atlanta_In	6/12/08	8:00AM
OUT	Atlanta_Out	6/12/08	3:29PM

Selected Entry/Exit  
 Server ID: 01  
 Sub Net: 192.168.0.191  
 Controller ID: 1

Regular Hours: 40.00

☒ Export TimeData.CSV

Since we are making a change to the Time Attendance records, a pop-up window appears where a description of the change can be documented.



Explanation for Changes

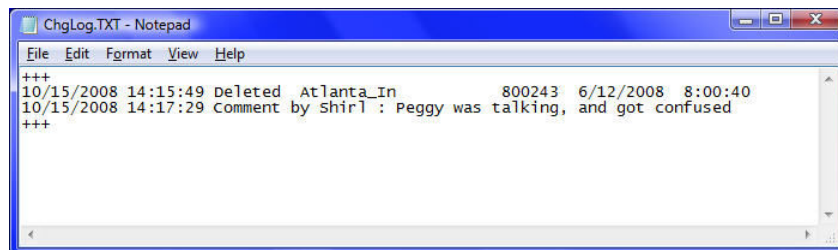
Please enter the explanation for the changes:

Change by: Shrl

Explanation: Peggy was talking, and got confused

Close

These comments can later be reviewed from the Review Attendance Window, by selecting the "View Log" button.



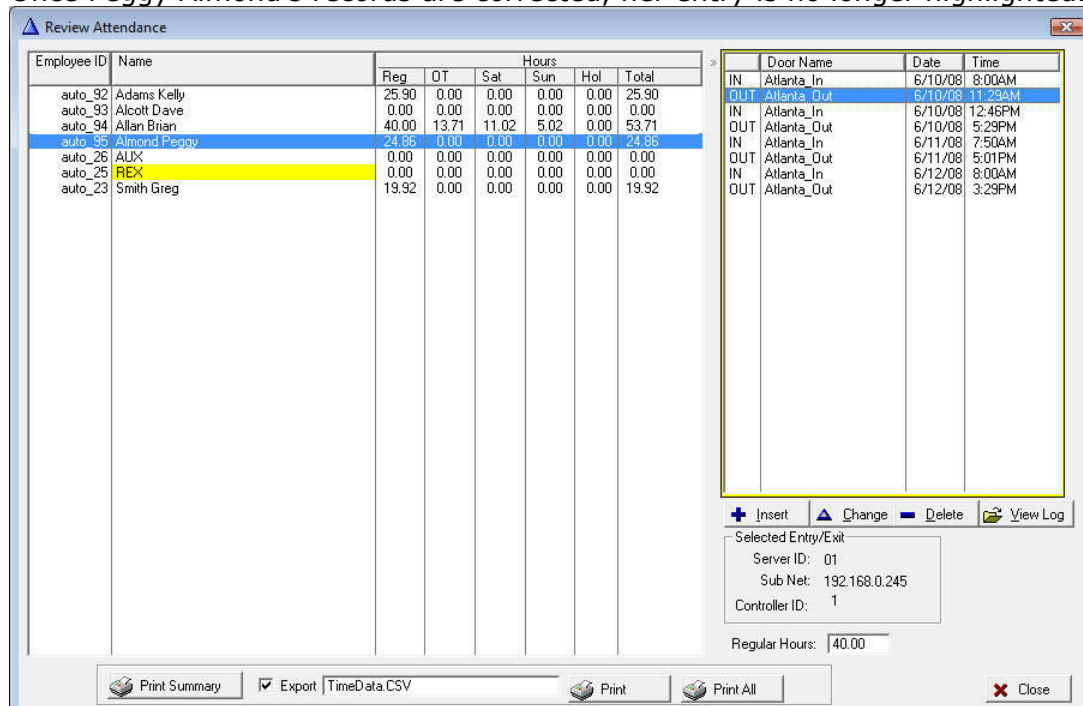
```

+++
10/15/2008 14:15:49 Deleted Atlanta_In 800243 6/12/2008 8:00:40
10/15/2008 14:17:29 Comment by Shrl : Peggy was talking, and got confused
+++

```

The "View Log" option is only available when the Review Attendance window is accessed thru the Administrator application.

Once Peggy Almond's records are corrected, her entry is no longer highlighted.



Review Attendance

Employee ID	Name	Reg	OT	Sat	Sun	Hol	Total
auto_92	Adams Kelly	25.90	0.00	0.00	0.00	0.00	25.90
auto_93	Alcott Dave	0.00	0.00	0.00	0.00	0.00	0.00
auto_94	Allan Brian	40.00	13.71	11.02	5.02	0.00	53.71
auto_95	Almond Peggy	24.35	0.00	0.00	0.00	0.00	24.35
auto_26	AUX	0.00	0.00	0.00	0.00	0.00	0.00
auto_25	REX	0.00	0.00	0.00	0.00	0.00	0.00
auto_23	Smith Greg	19.92	0.00	0.00	0.00	0.00	19.92

Door Name	Date	Time
IN Atlanta_In	6/10/08	8:00AM
OUT Atlanta_Out	6/10/08	11:22AM
IN Atlanta_In	6/10/08	12:46PM
OUT Atlanta_Out	6/10/08	5:29PM
IN Atlanta_In	6/11/08	7:50AM
OUT Atlanta_Out	6/11/08	5:01PM
IN Atlanta_In	6/12/08	8:00AM
OUT Atlanta_Out	6/12/08	3:29PM

Selected Entry/Exit:  
 Server ID: 01  
 Sub Net: 192.168.0.245  
 Controller ID: 1  
 Regular Hours: 40.00

☒ Export TimeData.CSV

## 2.2.2.2 ATTENDANCE REPORT GENERATION:

The Attendance data can be reported in two forms. One is a summary format, which includes one line per person, and the other is a more detailed format, which generates a page of data for each person.

The data can be exported to a Comma-Separated-Value text file (CSV file). The default file name is TimeData.CSV, but that name can be modified in the field shown.

From the Review Attendance window, selecting the "Print Summary", generates the summary report.

ISONAS Access Control System

Hours Summary Report

From: 6/01/2008 To: 6/20/2008

All People

Security Clearance	Employee ID	Hours						
		Reg	OT	Total	Saturday	Sunday	Holiday	
Adams, Kelly	auto_92	25.90	0.00	25.90	0.00	0.00	0.00	
Alcott, Dave	auto_93	0.00	0.00	0.00	0.00	0.00	0.00	
Allan, Brian	auto_94	40.00	13.71	53.71	11.02	5.02	0.00	
Almond, Peggy	auto_95	24.86	0.00	24.86	0.00	0.00	0.00	
AUTO_UNLOCK,	auto_7	0.00	0.00	0.00	0.00	0.00	0.00	
AUX,	auto_26	0.00	0.00	0.00	0.00	0.00	0.00	
BADGE_UNLOCK,	auto_8	0.00	0.00	0.00	0.00	0.00	0.00	
REX,	auto_25	0.00	0.00	0.00	0.00	0.00	0.00	
Smith, Greg	auto_23	19.92	0.00	19.92	0.00	0.00	0.00	
UNLOCK_INTERVAL,	auto_9	0.00	0.00	0.00	0.00	0.00	0.00	

The generated CSV file is shown below:

kba0100_TimeData_summary.CSV - Notepad							
File Edit Format View Help							
UniqueID,Reg,OT,Total,Saturday,Sunday,Holiday							
auto_92	,	25.90,	,	25.90,	,	,	,
auto_93	,	,	,	,	,	,	,
auto_94	,	40.00,	13.71,	53.71,	11.02,	5.02,	,
auto_95	,	24.86,	,	24.86,	,	,	,
auto_7	,	,	,	,	,	,	,
auto_26	,	,	,	,	,	,	,
auto_8	,	,	,	,	,	,	,
auto_25	,	,	,	,	,	,	,
auto_23	,	19.92,	,	19.92,	,	,	,
auto_9	,	,	,	,	,	,	,

There is one line of data for each person, and the columns are:

The Person's "Unique ID"

The total number of regular hours worked in the selected time period.

The total number of overtime hours worked in the selected time period.

The grand total number of hours worked in the selected time period.

The total number of Saturday hours worked in the selected time period.

The total number of Sunday hours worked in the selected time period.

The total number of Holiday hours worked in the selected time period.

The "Print" or "Print All" buttons, generates the Attendance Detail report.

"Print" will generate a report for the single person selected on the review form, and "Print All" will generate a report that includes everyone shown on the review form.

The printable report has one page per person, and is shown below. There is an entry for each time the employee entered and left the facility.

**ISONAS Access Control System**  
**Complete Payroll Report**

For the Period: 6/01/2008 To: 6/20/2008  
All People

---

Name: Adams, Kelly      Security Clearance      Purchasing Agent      Code (ID): auto\_92  
SSN: 000-00-0000

Date In	Time In	Date Out	Time Out	Hours	Day Total
6/10/2008	8:01AM	6/10/2008	11:29AM	3.47	
6/10/2008	12:45PM	6/10/2008	6:31PM	5.76	9.23
6/11/2008	7:50AM	6/11/2008	5:01PM	9.18	9.18
6/12/2008	8:00AM	6/12/2008	3:29PM	7.49	7.49
<b>Holiday Hours:</b>				<b>Total:</b>	<b>25.90</b>
<b>Sunday Hours:</b>					
<b>Saturday Hours:</b>					

Management Signature \_\_\_\_\_

Employee Signature \_\_\_\_\_

Date \_\_\_\_\_

The generated CSV file is shown below:

```
TimeData.CSV - Notepad
File Edit Format View Help
ISONAS Access Control System
Complete Payroll Report
For the Period: 6/01/2008 To: 6/20/2008
All People
Name: ,Adams, Kelly      .Security Clearance ,Purchasing Agent ,Code (ID),auto_92
,Date In,Time In,Date Out,Time Out,Hours,Day Total
, 6/10/2008, 8:01AM, 6/10/2008,11:29AM, 3.470,,
, 6/10/2008,12:45PM, 6/10/2008, 6:31PM, 5.760, 9.230,
, 6/11/2008, 7:50AM, 6/11/2008, 5:01PM, 9.180, 9.180,
, 6/12/2008, 8:00AM, 6/12/2008, 3:29PM, 7.490, 7.490,
,,, Holiday Hours: , , Total:, 25.900
,,, Sunday Hours: ,
,,, Saturday Hours: ,
Name: ,Alcott, Dave      .Security Clearance ,Code (ID),auto_93
,Date In,Time In,Date Out,Time Out,Hours,Day Total
,,, Holiday Hours: , , Total:, 0.000
,,, Sunday Hours: ,
,,, Saturday Hours: ,
Name: ,Allan, Brian      .Security Clearance ,Code (ID),auto_94
,Date In,Time In,Date Out,Time Out,Hours,Day Total
, 6/10/2008, 8:01AM, 6/10/2008, 5:29PM, 9.480, 9.480,
, 6/11/2008, 7:50AM, 6/11/2008, 3:30PM, 7.670, 7.670,
, 6/12/2008, 8:00AM, 6/12/2008, 3:29PM, 7.490, 7.490,
, 6/13/2008, 6:02AM, 6/13/2008, 7:04PM, 13.030, 13.030,
SATURDAY, 6/14/2008, 9:08AM, 6/14/2008, 8:10PM, 11.020, 11.020,
SUNDAY, 6/15/2008, 9:11AM, 6/15/2008, 2:12PM, 5.020, 5.020,
,,, Holiday Hours: , , Total:, 53.710
,,, Sunday Hours: , 5.020
,,, Saturday Hours: , 11.020
Name: ,Almond, Peggy      .Security Clearance ,Code (ID),auto_95
```

**For more information:**

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