Johnson Controls

P2000

Security Management System

MIS Interface Configuration

Version 3.11 and higher, September, 2011
24-10618-74 Revision –

These instructions are supplemental. Often they are supplemental to other manufacturer's documentation. Never discard other manufacturer's documentation. Publications from Johnson Controls, Inc. are not intended to duplicate nor replace other manufacturer's documentation.

If this document is translated from the original English version by Johnson Controls, Inc., all reasonable endeavors will be used to ensure the accuracy of translation. Johnson Controls, Inc. shall not be liable for any translation errors contained herein or for incidental or consequential damages in connection with the furnishing or use of this translated material.

MIS INTERFACE CONFIGURATION

The MIS Interface provides a means for the P2000 system to receive cardholder information and queries from an external source such as a Human Resource system. Using the P2000 MIS Interface Service and an external Open Database Connectivity (ODBC)-based program, you can add, modify, or delete cardholders and their badges in the P2000 system, or you can query cardholder information using *wildcards*. The MIS Interface communicates with the external application via an ODBC connection, which receives data and returns command and query results through input and output tables.

NOTE

The screen captures shown in this manual may differ slightly, depending on the software version you are using.

This program is designed for use with P2000 version 3.11 and higher (for the Microsoft® Windows Server® platform). The MIS Interface that resides on the P2000 Server is called P2000 MIS Interface Service, which is a Windows® service designed to import and export data.

This document provides the information you need to create your ODBC-based program and use the MIS commands.

NOTE

Do not attempt to configure the MIS interface unless you are a qualified database programmer. MIS is a low-level interface that requires programming to implement.

Instructions are presented in the following sections:

- System Requirements (see page 2)
- Input and Output Tables (see page 12)
- MIS Commands (see page 13)
- Table Definitions (see page 16)
- Partitioned Systems (see page 30)

NOTE

*The MIS Interface is intended **only** as a tool to allow an external system to Export Images and Add, Update, Delete, or Query the P2000 cardholder database. It is not intended to keep the P2000 database and the external data in absolute "sync." Records deleted from within P2000 are not automatically deleted from the external database. We recommend that specific procedures be established to manage your use of the MIS Interface.*

SYSTEM REQUIREMENTS

CPU speed, memory, and disk requirements are determined by the size of the external system application. The external system will need a network connection to the P2000 Server. The MIS Interface tables are available upon installation and activation of the P2000 software. No separate installation media is required.

The following elements are external to the P2000 software. They must be in place, or the MIS Interface will not be able to receive data or respond to queries:

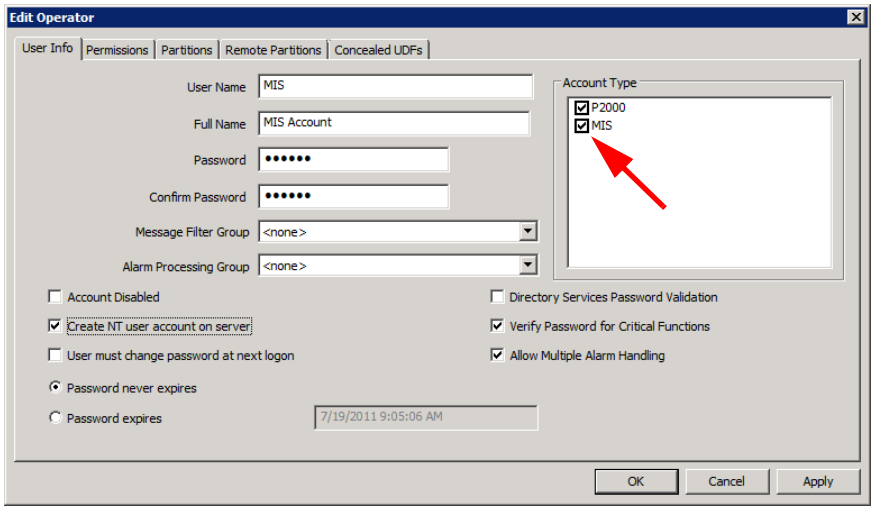
- Network connection to link the external system with the P2000 Server
- MIS Interface (no separate installation media is required)
- ODBC 2.6 or higher (installed in the external system)
- Microsoft SQL Service ODBC driver (already installed in the P2000 system)
- An ODBC-based program that communicates between the external data source and MIS Input/Output tables (see "Configuring an ODBC Connection" on page 4)

NOTE

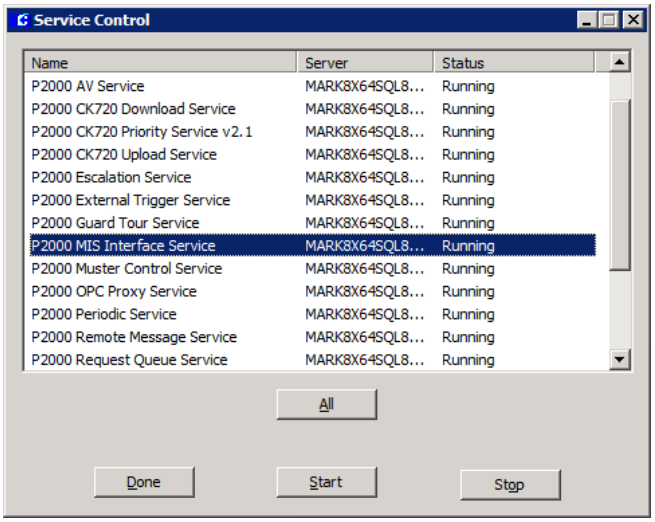
The external system can be any ODBC-capable application, such as Microsoft Excel or Access. This system is supplied by the user and is not included in the P2000 software.

Once the above components are in place, you must set up the following elements at the P2000 Server:

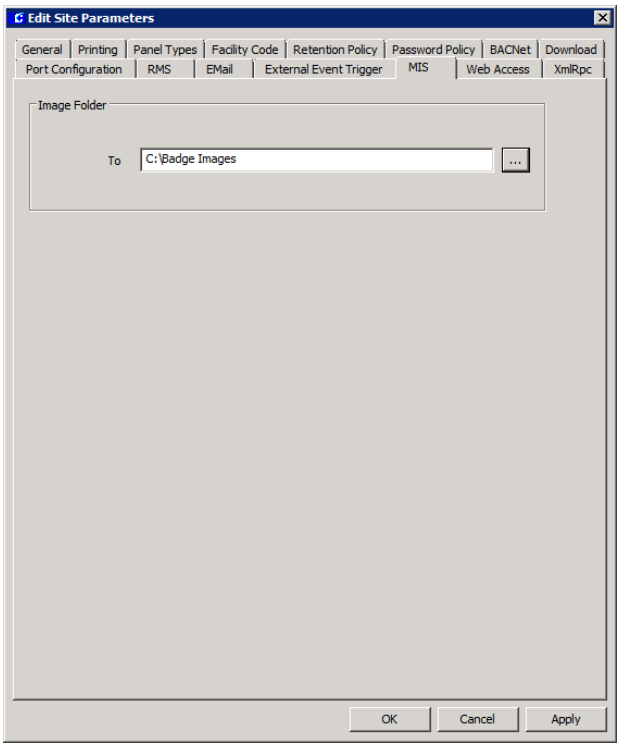
- The operator assigned to use the MIS Interface must have the MIS account type enabled. To do this, simply select the **MIS** account type check box in the Edit Operator application. To prevent unauthorized changes to the P2000 system, we strongly recommend using a separate Operator account for the MIS interface; otherwise, the operator may have full access to the P2000 system.



- To add or modify User-Defined Fields (UDFs) for use in the MIS interface, the P2000 operator must be a member of the **PEGASYS Administrators** group. See also “UDF Limitations” on page 12.
- The **P2000 MIS Interface Service** must be running (use the Service Control application to start or stop this service).



- If using the **Export Image** command, on the Edit Site Parameters window (**MIS** tab), select the location where exported badge images will be stored.



For detailed instructions, refer to the *P2000 Software User Manual*.

CONFIGURING AN ODBC CONNECTION

This section describes how to configure an ODBC connection between the P2000 MIS Input/Output tables and an external data source. Configuring an ODBC connection consists of the following:

- Adding a P2000 operator to the P2000 server and assigning the account to the P2000 PEGASYS MIS Users group (see page 5)
- Configuring an ODBC data source on the external system (see page 7)

NOTE

This section describes one of many possible methods for setting up an ODBC connection between the P2000 MIS input/output tables and an external data source. This section may or may not apply to your site, depending on the database management system that will interface with the P2000 database.

P2000 Server Setup

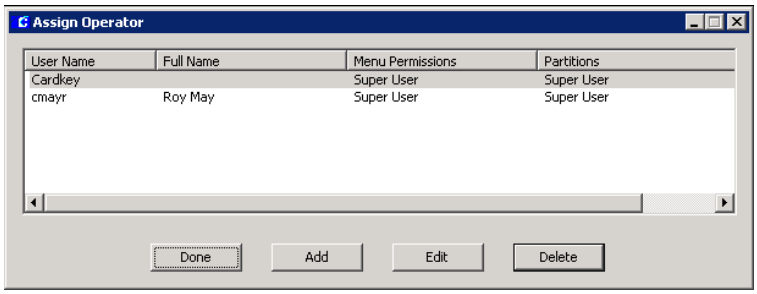
NOTE

If your system's network uses domains, consult with your local IT Administrator before proceeding with the following instructions.

➤ **To add a P2000 operator to the P2000 Server and assign the account to the P2000 PEGASYS MIS users group:**

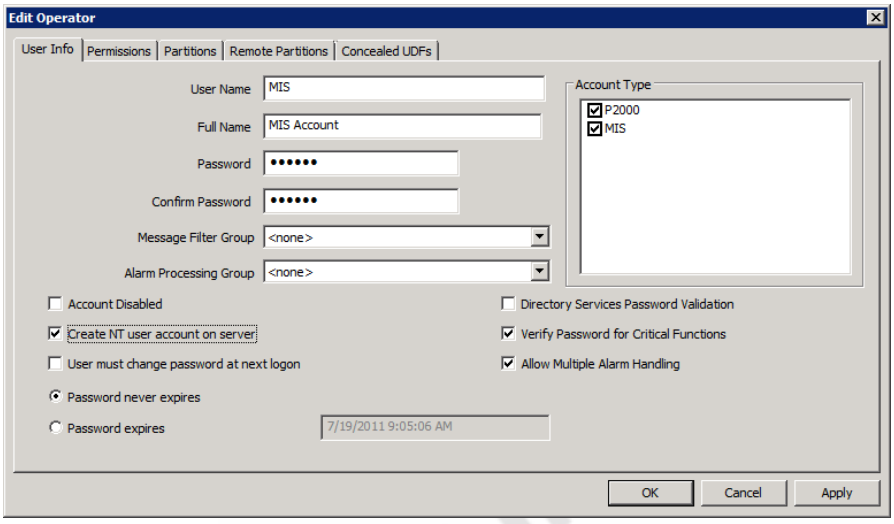
1. From the P2000 server, select **Operator>Assign Operator** from the menu bar.
2. If prompted, enter your password and click **OK**.

   The Assign Operator window appears.



3. Click **Add**.

   The Edit Operator dialog box appears.

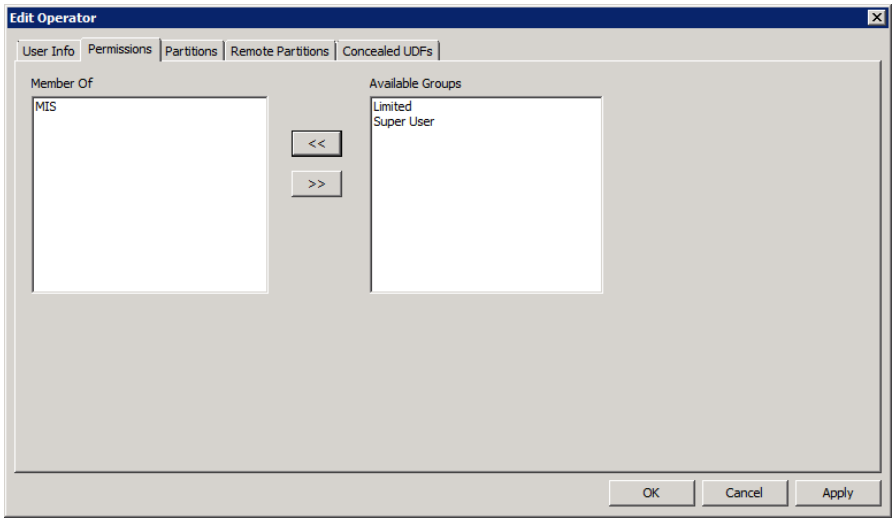


4. On the **User Info** tab, enter a **User Name** and **Password**. Re-enter the password in the **Confirm Password** field.

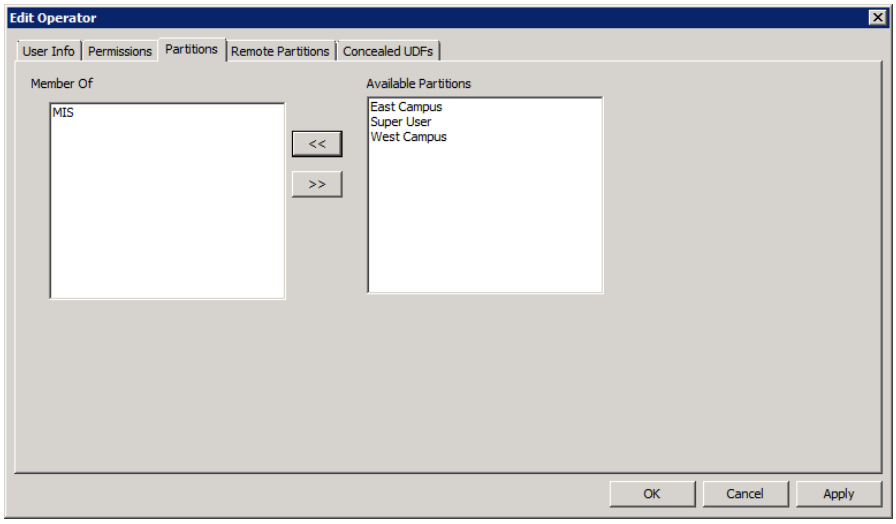
NOTE

For more detailed information on assigning a P2000 operator, refer to the P2000 Software User Manual.

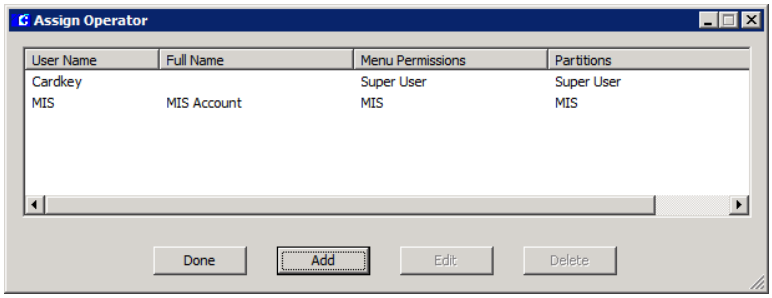
5. Select the **Create NT user account on server** check box.
6. If selected, deselect the **User must change password at next logon** check box.
7. Select the **Password never expires** radio button.
8. In the **Account Type** box, select the **MIS** check box.
9. Select the **Permissions** tab.
10. Assign a menu permission group to the account. To assign a group, select it in the **Available Groups** box and click the left arrow button. The selected group is moved to the **Member Of** box.



11. Select the **Partitions** tab.
12. Assign a partition to the account. To assign a partition, select it in the **Available Partitions** box and click the left arrow button. The selected partition is moved to the **Member Of** box.



13. Click **OK**. The new operator account appears on the Assign Operator window.



14. Close the Assign Operator window.

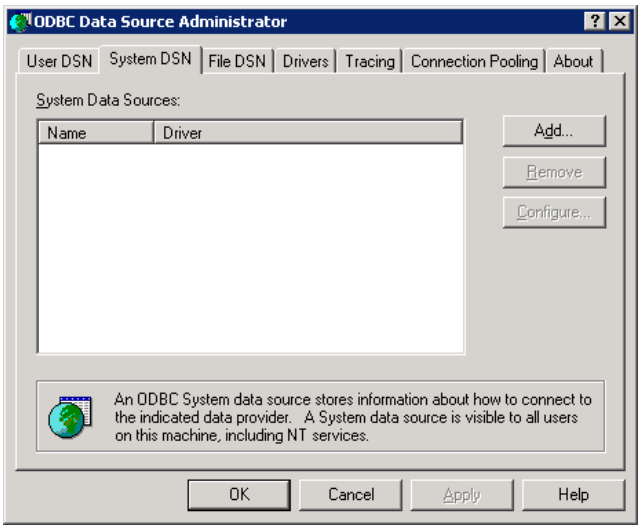
Configuring an ODBC Data Source on the Client Computer

NOTE

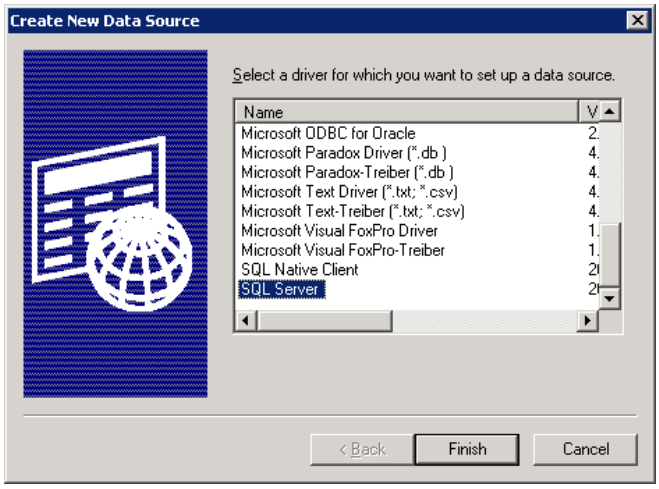
The screen captures and instructions in this section may vary according to the Windows operating system you are using. Refer to the operating system's documentation for assistance.

➤ **To configure an ODBC data source on the client computer:**

1. From the Windows Control Panel, double-click **Administrative Tools**.
2. Double-click **Data Sources (ODBC)**. The ODBC Data Source Administrator window appears.
3. Select the **System DSN** tab.

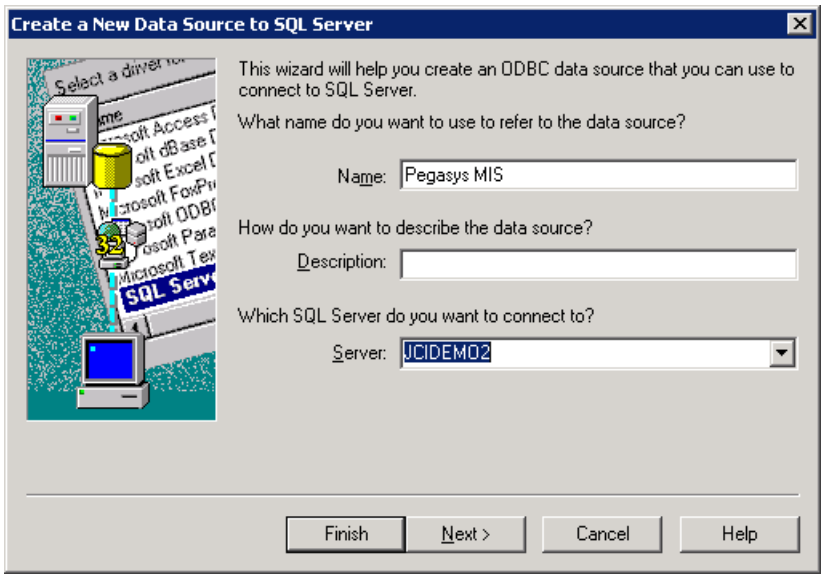


4. Click **Add**. The Create New Data Source dialog box appears.
5. Select SQL Server from the list of drivers and click **Finish**.

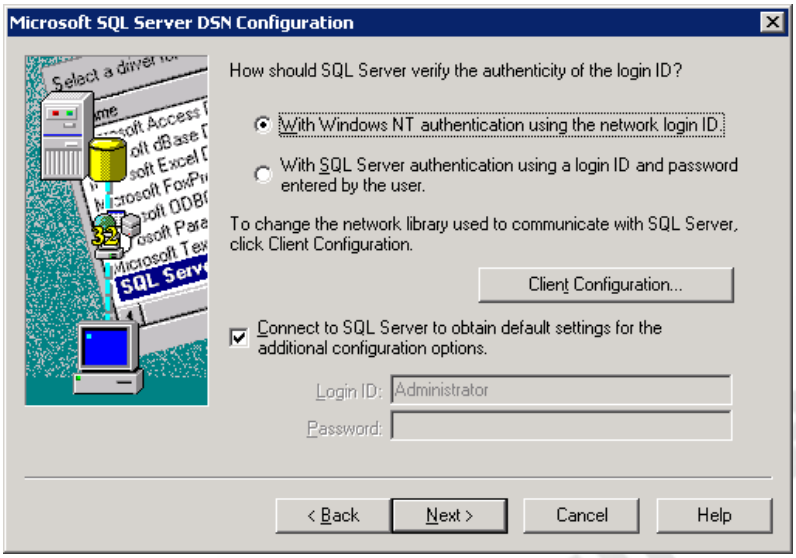


The Create a New Data Source to SQL Server window appears.

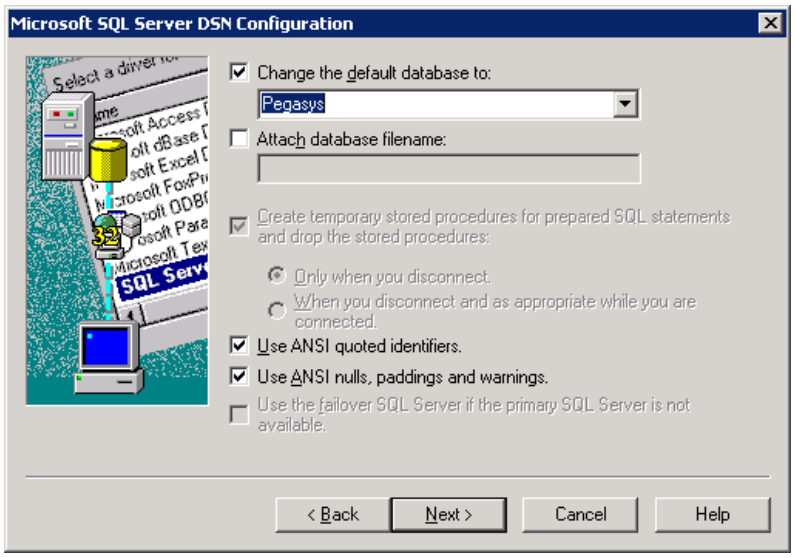
6. Enter a **Name** that represents the new data source (for example, Pegasys MIS).
7. Select the name of the P2000 server in the **Server** drop-down list and click **Next**.



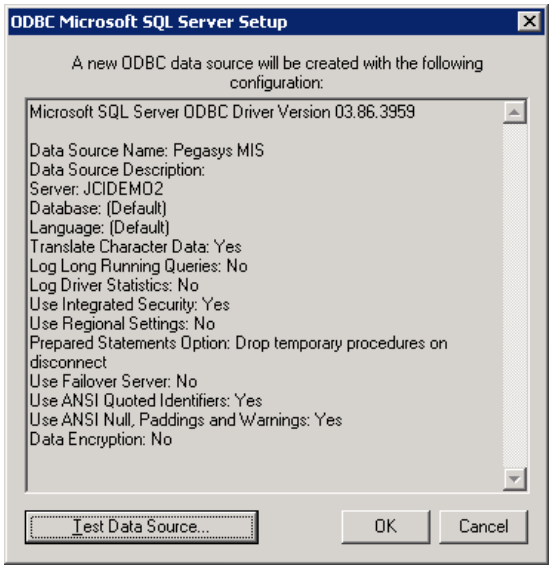
8. On the next page, verify the following items are selected and click **Next**:
   - **With Windows NT authentication using the network login ID** radio button
   - **Connect to SQL Server to obtain default settings for the additional configuration options** check box



9. On the next page, select the **Change the default database to** check box and select **Pegasys** in the drop-down list.



10. Click **Next**.
11. Click **Finish**. The ODBC Microsoft SQL Server Setup dialog box appears.



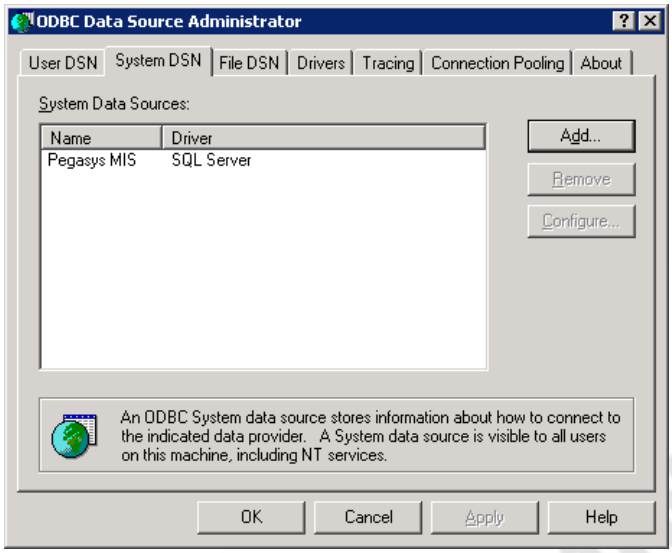
12. Click the **Test Data Source** button.

If the test is successful, a TESTS COMPLETED SUCCESSFULLY! message appears.

If you receive an error message, repeat the instructions in this section.

13. Click **OK**.
14. Click **OK** on the ODBC Microsoft SQL Server Setup dialog box.

    The new data source should appear on the ODBC Data Source Administrator window.



15. Click **OK**.
16. Close the Administrative Tools window.

INPUT AND OUTPUT TABLES

The MIS Interface communicates with the external application via an ODBC connection to receive data and return command and query results through two database tables: an Input table and an Output table. These tables are created automatically. The Input table receives data and commands from the external system. The results of the commands issued to P2000 from the Input table are returned to the Output table.

When the external program writes a record into the Input table, the P2000 system reads that record and performs the requested action (Add, Delete, Update, Query, Query Multiple, Export Images, or Delete Badge). The results of that operation are written to the Output table and the record in the Input table is deleted. The external software should enter a unique Request ID for each record. Results are reported by Record ID and can be reviewed via the external program.

Results can be either *successful* or report an error on a specific Request ID. If multiple records are sent to the Input table, they are processed in the same manner: as a group of records is processed and clears the Input table, the next group is read and processed. (Request IDs remain intact, though records may not necessarily be processed in any particular order.) Records are removed from the Output table by the external system. All successful operations that modify a P2000 record will generate a message in the normal P2000 Audit log.

Character Field Lengths

When adding records to P2000, keep the fields in the records within the character limits specified in the table definitions. Entries exceeding the character limits will appear truncated in P2000. See “Table Definitions” on page 16 for details.

UDF Limitations

UDF names that exceed the 18-character limit will not display accurately. These limitations can be exceeded without affecting MIS performance; however, UDF names exceeding the 18-character limit will appear truncated in the Input/Output table; field titles, periods, and spaces will appear as underscores. The UDF names must be unique within the first 18 characters.

Error Codes

When fields are invalid, or if the table does not find a matching cardholder Unique_ID, the result field in the Output table will report an error. See “Table Definitions” on page 16 for definitions.

Badge Data

The MIS Interface provides limited capability for the external system to assign badges to cardholders or modify access privileges for existing badges. The MIS Interface will remove any badges assigned to a cardholder if the cardholder is deleted through the MIS interface. For further details, see “Processing Badge Information” on page 15.

MIS COMMANDS

The MIS Interface allows six basic commands: **Add**, **Update**, **Delete**, **Query**, **Query Multiple**, **Export Image**, and **Delete Badge**.

Add Operation

When the MIS Interface receives a record in the Input table with an **Add** command (Command = 1), the cardholder will be added to the P2000 cardholder database. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1).

If any of the fields are invalid, or if a cardholder exists with the same ID field value, an error will be returned in the Result field. The cardholder data fields from the Input table record will be copied into the Output table record.

NOTE

Invalid badge information will prevent the entire record from being processed.

Update Operation

When the MIS Interface receives a record in the Input table with an **Update** command (Command = 2), the P2000 system will query its database for a cardholder with a matching ID field. If a matching cardholder is found, all the fields in the record will be placed into the P2000 database record. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1).

If any of the fields are invalid, or if a cardholder with the same ID field value could not be found, an error will be returned in the Result field. The cardholder data fields from the Input table record will be copied into the Output table record. If the StartDate or EndDate is changed, the badges may become valid or invalid. If so, these changes will be downloaded to all affected panels.

NOTE

*Invalid badge information will prevent the entire record from being processed. In addition, the **Update** command can also **Add** a badge.*

NULL Fields

For Update commands, some non-required input fields that are NULL will cause the corresponding value in the P2000 database to retain its existing value. See Table 1 on page 17. In this table, the values associated with the items marked as "Retained if NULL" will be retained if they are NULL.

Erasing Field Values Using the Update Command

Most fields can be erased with update commands by specifying a particular value. See Table 1 on page 17 for input values that erase P2000 cardholder field data.

Delete Operation

When the MIS Interface receives a record in the Input table with a **Delete** command (Command = 3), the P2000 system will query its database for a cardholder with a matching ID field. If a matching cardholder is found, the P2000 database record for that cardholder will be deleted. Any badges assigned to that cardholder will also be deleted. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1).

If any of the fields are invalid, or if a cardholder with the same ID field value could not be found, an error will be returned in the Result field. The cardholder data fields from the Input table record will be copied into the Output table record.

If any badges were deleted, these changes will be downloaded to all affected panels.

Query (and Query Multiple) Operations

When the MIS Interface receives a record in the Input table with a **Query** command (Command = 4) or a **Query Multiple** command (Command = 7), the P2000 system creates an SQL query using the non-NULL fields from the First Name, Last Name, and ID fields as the search criteria. A record for each matching cardholder will be placed into the P2000 database record. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1).

For the **Query** command, the badge fields in the MIS Output table will be initialized/filled with the details of *one* badge associated with the cardholder.

For the **Query Multiple** command, if a cardholder record has multiple badges, separate records for the same cardholder will be placed into the Output table with a result of SUCCESS (Result = 1) for **each** badge detected.

If no cardholders were found, a single record with all cardholder data fields set to NULL will be placed into the Output table with a result of SUCCESS (Result = 1).

Since a Query may produce multiple results, assigning a unique Request_ID to each record in the Input table is recommended (but not required). This will allow records in the Output table to be easily queried or sorted to match the results with the query that generated them.

NOTE

If the ID field is not specified, both the FirstName and LastName fields must contain search criteria. Both fields accept wild cards: %=String Match and _=Single Character Match.

Export Image Operation

When the MIS Interface receives a record in the Input table with an **Export Image** command (Command = 5), the P2000 system will create an SQL query using the non-NULL fields from the Input record as the search criteria. The command will cause MIS to retrieve the image for the specified cardholder (using the ID field as the unique cardholder key) and write the image to a JPEG file. If **PortraitFile** is NULL, the file will be named xxxx.jpg, where xxxx is the cardholder ID, and this file will be placed in the Image Folder specified in the MIS tab of the Site Parameters application. If the PortraitFile contains a file name, the image will be written to the specified file. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1). See "Query (and Query Multiple) Operations" on page 14 for details on the provided cardholder information.

If no cardholders were found, a single record with all cardholder data fields set to NULL will be placed into the Output table with a result of SUCCESS (Result = 1).

Delete Badge Operation

When the MIS Interface receives a record in the Input table with a Delete Badge command (Command = 6), the P2000 system will query its database for a cardholder with a matching ID field. If a matching cardholder is found, the database is queried for a badge with a matching number. If the badge is found and is owned by the correct cardholder, the badge will be deleted from the P2000 database and downloaded to all affected panels. The cardholder data will be placed into the Output table with a result of SUCCESS (Result = 1).

If any of the fields are invalid, or the cardholder or badge could not be found, an error will be returned in the Result field. The data fields from the Input table will be copied into the Output table record.

Processing Badge Information

The MIS Interface provides the following limited badge processing capabilities:

- If no badge number is provided in the Input table, the MIS Interface Service ignores information provided in the following columns:
  - Facility Code
  - Issue Level
  - Access Group
  - Timezone
  - Badge Disable

- If a badge number is provided:
  - The facility code uses the first facility code defined in Site Parameters if no facility code is provided.
  - The issue level is initialized with 0 if no issue level is provided.
- The processing of the entire MIS record is rejected if one of the following conditions is met:
  - Facility code is unknown in the system.
  - Badge is currently owned by another cardholder.
  - Badge belongs to a different partition than the one in the Input table and is **not** Public.
  - Issue Level is out of range (less than 0 or greater than 255).
  - Access Group is invalid for the current partition or unknown in the system.
  - Timezone is invalid for the current partition or unknown in the system

The above mentioned Access Groups and Timezones checks are only performed if the Access Group and Timezone are not empty. A record that contains neither an Access Group nor a Timezone will be processed; however, a record that provides only one of the two types of information will be rejected. Any updates required due to changes in the badge information will trigger the necessary downloads.

TABLE DEFINITIONS

Use the Error Codes table to determine the value or meaning of the results returned for invalid records.

Input and Output table field definitions are provided in the following tables. Both the Input and Output tables will have columns for each User Defined Field (UDF) defined in the P2000 system; if a UDF field is added, deleted, or changed in the P2000 system, the Input and Output tables will be changed to reflect the changed UDF.

MIS Interface Input Table

NOTE

*The value **<none>**, as listed under the Value that Erases Field data column in the following table, must be entered to erase the associated field value. The value **<none>** does not mean that there is no command to erase the field data.*

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
Command	Integer	1 = Add 2 = Update 3 = Delete 4 = Query 5 = Export Image 6 = Delete Badge 7 = Query Multiple		
LoginName	NChar[25]	Must match operator credentials defined in P2000		
Password	NChar[25]	Must match operator credentials defined in P2000		
RequestID	Integer	Assigned by the external system (to identify Output record). This will allow records in the Output table to be easily queried or sorted to match the results with the query that generated them.		
FirstName	NChar[25]			
MiddleName	NChar[25]		Yes	<none>
LastName	NChar[25]			
ID	NChar[25]	Must be unique for every cardholder		
Suite	NChar[32]		Yes	<none>
Address	NChar[64]		Yes	<none>
City	NChar[32]		Yes	<none>
State	NChar[32]		Yes	<none>
Zip	NChar[32]		Yes	<none>
Phone	NChar[16]		Yes	<none>
Extension	NChar[6]		Yes	<none>
Email	NChar[64]		Yes	<none>
StartDate	Datetime	MM/DD/YYYY or similar format <space> 00:00:00	Yes	1/1/1900
EndDate	Datetime	If not NULL, MM/DD/YYYY or similar format <space> 00:00:00	Yes	1/1/1900
Company	NChar[32]	If the value is not NULL and does not match an existing Company name, the P2000 system will add the Company name to the database.	Yes	<none>
Department	NChar[32]	If the value is not NULL and does not match an existing Department name, the P2000 system will add the Department name to the database.	Yes	<none>

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
Type	Integer	0 = Regular 1 = Visitor	Yes	
CardholderPublic	Integer		Yes	
PortraitFile	NChar[250]	For Add and Update commands, the PortraitFile column contains the image file to read. If the filename contains path information, the image will be read from the file and path specified. If the filename does not contain path information, the image will be read from the MIS Image Folder setting in Site Parameters.	Yes	
SponsorID	NChar[25]	If not NULL, must be an existing Cardholder Unique ID (only for Visitor Type)	Yes	<none>
BadgePublic	Integer		Yes	
Facility Code	Integer	As defined in Site Parameters, or zero for default Facility Code	Yes	
Badge	NChar[20]		Yes	
IssueLevel	Integer	0 to 255	Yes	
PinCode	Integer	0 to 99999	Yes	
BadgePurpose	NChar[32]		Yes	<none>
BadgeReason	NChar[32]		Yes	<none>
BadgeDesign	NChar[32]		Yes	<none>
BadgeStartDate	Datetime		Yes	1/1/1900
BadgeEndDate	Datetime		Yes	1/1/1900
BadgeDisable	Small int	1 = Disabled, 0 = Enabled	Yes	
BadgeExecPriv	Small int	1 = Executive Privilege	Yes	
BadgeTrace	Small int	1 = Trace On	Yes	
BadgeOverride	Small int	1 = Allow Override	Yes	
BadgeFlagA	Small int	1 = Flag On	Yes	
BadgeFlagB	Small int	1 = Flag On	Yes	
BadgeFlagC	Small int	1 = Flag On	Yes	
EventPrivLevel	Small int	0 to 9	Yes	
SecurityLevel	Small int	0 to 99	Yes	
AccessGrp	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_01	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
Timezone_01	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_02	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_02	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_03	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_03	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_04	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_04	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_05	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_05	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_06	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_06	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_07	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_07	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_08	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_08	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_09	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_09	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_10	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_10	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_11	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_11	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_12	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
Timezone_12	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_13	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_13	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_14	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_14	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_15	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_15	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_16	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_16	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_17	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_17	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_18	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_18	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_19	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_19	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_20	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_20	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_21	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_21	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_22	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_22	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_23	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
Timezone_23	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_24	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_24	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_25	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_25	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_26	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_26	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_27	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_27	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_28	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_28	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_29	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_29	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_30	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_30	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessGrp_31	NChar[32]	If not NULL, must match existing Access Group	Yes	<none>
Timezone_31	NChar[32]	If not NULL, must match existing Timezone	Yes	<none>
AccessStart	Datetime		Yes	1/1/1900
AccessVoid	Datetime		Yes	1/1/1900
AccessStart_01	Datetime		Yes	1/1/1900
AccessVoid_01	Datetime		Yes	1/1/1900
AccessStart_02	Datetime		Yes	1/1/1900
AccessVoid_02	Datetime		Yes	1/1/1900
AccessStart_03	Datetime		Yes	1/1/1900
AccessVoid_03	Datetime		Yes	1/1/1900
AccessStart_04	Datetime		Yes	1/1/1900

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
AccessVoid_04	Datetime		Yes	1/1/1900
AccessStart_05	Datetime		Yes	1/1/1900
AccessVoid_05	Datetime		Yes	1/1/1900
AccessStart_06	Datetime		Yes	1/1/1900
AccessVoid_06	Datetime		Yes	1/1/1900
AccessStart_07	Datetime		Yes	1/1/1900
AccessVoid_07	Datetime		Yes	1/1/1900
AccessStart_08	Datetime		Yes	1/1/1900
AccessVoid_08	Datetime		Yes	1/1/1900
AccessStart_09	Datetime		Yes	1/1/1900
AccessVoid_09	Datetime		Yes	1/1/1900
AccessStart_10	Datetime		Yes	1/1/1900
AccessVoid_10	Datetime		Yes	1/1/1900
AccessStart_11	Datetime		Yes	1/1/1900
AccessVoid_11	Datetime		Yes	1/1/1900
AccessStart_12	Datetime		Yes	1/1/1900
AccessVoid_12	Datetime		Yes	1/1/1900
AccessStart_13	Datetime		Yes	1/1/1900
AccessVoid_13	Datetime		Yes	1/1/1900
AccessStart_14	Datetime		Yes	1/1/1900
AccessVoid_14	Datetime		Yes	1/1/1900
AccessStart_15	Datetime		Yes	1/1/1900
AccessVoid_15	Datetime		Yes	1/1/1900
AccessStart_16	Datetime		Yes	1/1/1900
AccessVoid_16	Datetime		Yes	1/1/1900
AccessStart_17	Datetime		Yes	1/1/1900
AccessVoid_17	Datetime		Yes	1/1/1900
AccessStart_18	Datetime		Yes	1/1/1900
AccessVoid_18	Datetime		Yes	1/1/1900
AccessStart_19	Datetime		Yes	1/1/1900
AccessVoid_19	Datetime		Yes	1/1/1900
AccessStart_20	Datetime		Yes	1/1/1900
AccessVoid_20	Datetime		Yes	1/1/1900
AccessStart_21	Datetime		Yes	1/1/1900
AccessVoid_21	Datetime		Yes	1/1/1900
AccessStart_22	Datetime		Yes	1/1/1900
AccessVoid_22	Datetime		Yes	1/1/1900

Table 1: MIS Interface Input Table

Column Name	Data Type	Usage	Retained if NULL[1]	Value that Erases Field Data[1,2]
AccessStart_23	Datetime		Yes	1/1/1900
AccessVoid_23	Datetime		Yes	1/1/1900
AccessStart_24	Datetime		Yes	1/1/1900
AccessVoid_24	Datetime		Yes	1/1/1900
AccessStart_25	Datetime		Yes	1/1/1900
AccessVoid_25	Datetime		Yes	1/1/1900
AccessStart_26	Datetime		Yes	1/1/1900
AccessVoid_26	Datetime		Yes	1/1/1900
AccessStart_27	Datetime		Yes	1/1/1900
AccessVoid_27	Datetime		Yes	1/1/1900
AccessStart_28	Datetime		Yes	1/1/1900
AccessVoid_28	Datetime		Yes	1/1/1900
AccessStart_29	Datetime		Yes	1/1/1900
AccessVoid_29	Datetime		Yes	1/1/1900
AccessStart_30	Datetime		Yes	1/1/1900
AccessVoid_30	Datetime		Yes	1/1/1900
AccessStart_31	Datetime		Yes	1/1/1900
AccessVoid_31	Datetime		Yes	1/1/1900
Site	NChar[32]	If NULL, cardholder/badge assigned to local site.	Yes	
UDF Text[3]	NChar[x][4]		Yes	<none>
UDF Selection[3]	NChar[x][4]		Yes	<none>
UDF Date[3]	Datetime		Yes	1/1/1900

1. For update commands only
2. Blank table cells in this column indicate that the field value for the data field cannot be erased by an update command.
3. Applies only to UDFs as they are configured for your particular system.
4. Number of characters will vary.

Fields Required for Each Command

Table 2: Fields Required for Each Command

Field	Command						
	Add	Update	Delete	Query	Export Image	Delete Badge	Query Multiple
Command	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LoginName	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 2: Fields Required for Each Command

Field	Command						
	Add	Update	Delete	Query	Export Image	Delete Badge	Query Multiple
Password	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FirstName	Yes	Yes	No	No	No	No	No
LastName	Yes	Yes	No	No	No	No	No
ID	Yes	Yes	Yes	No	No	Yes	No
Badge	No	No	No	No	No	Yes	No

NOTE

The Query can be searched by the following fields: the ID field or the FirstName and LastName fields.

NOTE

*For the **Query** command, if the ID field is not specified, the FirstName and LastName fields will be treated as search criteria. Both fields accept wild cards: %=String Match and _=Single Character Match.*

MIS Interface Output Table

Table 3: MIS Interface Output Table

Column Name	Data Type	Usage
Result	Integer	1 = Success. Overwrites error code as defined in Table 1.
RequestID	Integer	The Request_ID from the Input table record that caused the result
FirstName	NChar[25]	
MiddleName	NChar[25]	
LastName	NChar[25]	
ID	NChar[25]	
Suite	NChar[32]	
Address	NChar[64]	
City	NChar[32]	
State	NChar[32]	
Zip	NChar[32]	
Phone	NChar[16]	
Extension	NChar[6]	
Email	NChar[64]	
StartDate	Datetime	
EndDate	Datetime	
Company	NChar[32]	

Table 3: MIS Interface Output Table

Column Name	Data Type	Usage
Department	NChar[32]	
Type	Integer	0 = Regular, 1 = Visitor
CardholderPublic	Integer	
SponsorID	NChar[25]	Cardholder Unique ID
BadgePublic	Integer	
Facility Code	Integer	
Badge	NChar[20]	
IssueLevel	Integer	0 to 255
PinCode	Integer	0 to 99999
BadgePurpose	NChar[32]	
BadgeReason	NChar[32]	
BadgeDesign	NChar[32]	
BadgeStartDate	Datetime	
BadgeEndDate	Datetime	
BadgeDisable	Small int	1 = Disabled, 0 = Enabled
BadgeExecPriv	Small int	1 = Executive Privilege
BadgeTrace	Small int	1 = Trace On
BadgeOverride	Small int	1 = Allow Override
BadgeFlagA	Small int	1 = Flag On
BadgeFlagB	Small int	1 = Flag On
BadgeFlagC	Small int	1 = Flag On
EventPrivLevel	Small int	0 to 9
SecurityLevel	Small int	0 to 99
AccessGrp	NChar[32]	
Timezone	NChar[32]	
AccessGrp_01	NChar[32]	
Timezone_01	NChar[32]	
AccessGrp_02	NChar[32]	
Timezone_02	NChar[32]	
AccessGrp_03	NChar[32]	
Timezone_03	NChar[32]	
AccessGrp_04	NChar[32]	
Timezone_04	NChar[32]	
AccessGrp_05	NChar[32]	
Timezone_05	NChar[32]	
AccessGrp_06	NChar[32]	
Timezone_06	NChar[32]	
AccessGrp_07	NChar[32]	
Timezone_07	NChar[32]	
AccessGrp_08	NChar[32]	

Table 3: MIS Interface Output Table

Column Name	Data Type	Usage
Timezone_08	NChar[32]	
AccessGrp_09	NChar[32]	
Timezone_09	NChar[32]	
AccessGrp_10	NChar[32]	
Timezone_10	NChar[32]	
AccessGrp_11	NChar[32]	
Timezone_11	NChar[32]	
AccessGrp_12	NChar[32]	
Timezone_12	NChar[32]	
AccessGrp_13	NChar[32]	
Timezone_13	NChar[32]	
AccessGrp_14	NChar[32]	
Timezone_14	NChar[32]	
AccessGrp_15	NChar[32]	
Timezone_15	NChar[32]	
AccessGrp_16	NChar[32]	
Timezone_16	NChar[32]	
AccessGrp_17	NChar[32]	
Timezone_17	NChar[32]	
AccessGrp_18	NChar[32]	
Timezone_18	NChar[32]	
AccessGrp_19	NChar[32]	
Timezone_19	NChar[32]	
AccessGrp_20	NChar[32]	
Timezone_20	NChar[32]	
AccessGrp_21	NChar[32]	
Timezone_21	NChar[32]	
AccessGrp_22	NChar[32]	
Timezone_22	NChar[32]	
AccessGrp_23	NChar[32]	
Timezone_23	NChar[32]	
AccessGrp_24	NChar[32]	
Timezone_24	NChar[32]	
AccessGrp_25	NChar[32]	
Timezone_25	NChar[32]	
AccessGrp_26	NChar[32]	
Timezone_26	NChar[32]	
AccessGrp_27	NChar[32]	
Timezone_27	NChar[32]	
AccessGrp_28	NChar[32]	

Table 3: MIS Interface Output Table

Column Name	Data Type	Usage
Timezone_28	NChar[32]	
AccessGrp_29	NChar[32]	
Timezone_29	NChar[32]	
AccessGrp_30	NChar[32]	
Timezone_30	NChar[32]	
AccessGrp_31	NChar[32]	
Timezone_31	NChar[32]	
AccessStart	Datetime	
AccessVoid	Datetime	
AccessStart_01	Datetime	
AccessVoid_01	Datetime	
AccessStart_02	Datetime	
AccessVoid_02	Datetime	
AccessStart_03	Datetime	
AccessVoid_03	Datetime	
AccessStart_04	Datetime	
AccessVoid_04	Datetime	
AccessStart_05	Datetime	
AccessVoid_05	Datetime	
AccessStart_06	Datetime	
AccessVoid_06	Datetime	
AccessStart_07	Datetime	
AccessVoid_07	Datetime	
AccessStart_08	Datetime	
AccessVoid_08	Datetime	
AccessStart_09	Datetime	
AccessVoid_09	Datetime	
AccessStart_10	Datetime	
AccessVoid_10	Datetime	
AccessStart_11	Datetime	
AccessVoid_11	Datetime	
AccessStart_12	Datetime	
AccessVoid_12	Datetime	
AccessStart_13	Datetime	
AccessVoid_13	Datetime	
AccessStart_14	Datetime	
AccessVoid_14	Datetime	
AccessStart_15	Datetime	
AccessVoid_15	Datetime	
AccessStart_16	Datetime	

Table 3: MIS Interface Output Table

Column Name	Data Type	Usage
AccessVoid_16	Datetime	
AccessStart_17	Datetime	
AccessVoid_17	Datetime	
AccessStart_18	Datetime	
AccessVoid_18	Datetime	
AccessStart_19	Datetime	
AccessVoid_19	Datetime	
AccessStart_20	Datetime	
AccessVoid_20	Datetime	
AccessStart_21	Datetime	
AccessVoid_21	Datetime	
AccessStart_22	Datetime	
AccessVoid_22	Datetime	
AccessStart_23	Datetime	
AccessVoid_23	Datetime	
AccessStart_24	Datetime	
AccessVoid_24	Datetime	
AccessStart_25	Datetime	
AccessVoid_25	Datetime	
AccessStart_26	Datetime	
AccessVoid_26	Datetime	
AccessStart_27	Datetime	
AccessVoid_27	Datetime	
AccessStart_28	Datetime	
AccessVoid_28	Datetime	
AccessStart_29	Datetime	
AccessVoid_29	Datetime	
AccessStart_30	Datetime	
AccessVoid_30	Datetime	
AccessStart_31	Datetime	
AccessVoid_31	Datetime	
Site	NChar[32]	
UDF Text[1]	NChar[x][2]	
UDF Selection[1]	NChar[x][2]	
UDF Date[1]	Datetime	

1. Applies only to UDFs as they are configured for your particular system.
2. Number of characters will vary.

Error Codes Table

Table 4: Error Codes Table

Error Code	Description	Command[1]
101	Invalid MIS interface command	All
102	Invalid login	All
104	Undefined cardholder's first name	1,2
105	First name contains invalid characters _, %, [or]	1,2
107	Undefined cardholder's last name	1,2
108	Last name contains invalid characters _, %, [or]	1,2
110	Invalid unique id	1,2,3
111	Duplicated unique id	1,2,3
114	Invalid company name	1,2
115	Invalid department name	1,2
116	Invalid cardholder type (0 = regular, 1 = visitor)	1,2
117	Invalid sponsor	1,2
123	Invalid site	1,2
124	Invalid badge number	6
125	The P2000 has reached its maximum number of badges.	1
126	Cardholder is sponsoring visitors.	3
127	Database error (see Application Event log on server for details.)	All
128	Invalid badge design	1,2
303	Cardholder not found	2,3,4
304	Invalid start date and void date (for example, start date > void date)	1,2
305	No Image	5
306	Unknown Partition	All
307	Disabled account	All
308	Invalid account	All
309	Expired password	All
310	Partition rights insufficient	All
311	No sufficient rights to cardholder	All
312	No image folder defined	5
402	Issue level out of range	1,2
405	Badge owned by other cardholder	1,2
406	Badge in different partition	1,2
407	Facility code invalid	1,2
408	Security Level out of range	1,2
409	Event Privilege Level out of range	1,2
410	Pin Code out of range	1,2
500	Badge image database error	5
501	Portrait table error	5
502	Unable to export image	5
503	Database exception when exporting image	5

Table 4: Error Codes Table

Error Code	Description	Command[1]
504	Unable to load image	5
505	Invalid image file name	1,2,5
600 - 631	Access Group invalid (600 = Access Group, 601 = Access Group 1, . . . 631 = Access Group 32)	1,2
700 - 731	Timezone invalid (700 = Timezone, 701 = Timezone 1, . . . 731 = Timezone 32)	1,2
800 - 831	Access Group / Timezone combination invalid (800 = Access Group / Timezone, 801 = Access Group / Timezone 1, . . . 831 = Access Group / Timezone 32)	1,2
900 - 931	Access Void date before Access Start date (900 = Access Start / Void, 901 = AccessStart_01/AccessVoid_01, . . . 931 = AccessStart_31/AccessVoid_31)	1,2

1. See “Command” row in Table 1 for number reference.

PARTITIONED SYSTEMS

On a partitioned P2000 system, a set of Input and Output tables will be created for each partition. The table names will be prefixed by the Partition name. These tables are in addition to the normal Input and Output tables, which will be used for the Super User partition.

For example, if a P2000 system has two added partitions, named Partition 1 and Partition 2, the MIS Interface will consist of the following six tables:

super_user_input	Input table for Super User partition
Partition_1_input	Input table for Partition 1 partition
Partition_2_input	Input table for Partition 2 partition
super_user_output	Output table for Super User Partition
Partition_1_output	Output table for Partition 1 partition
Partition_2_output	Output table for Partition 2 partition

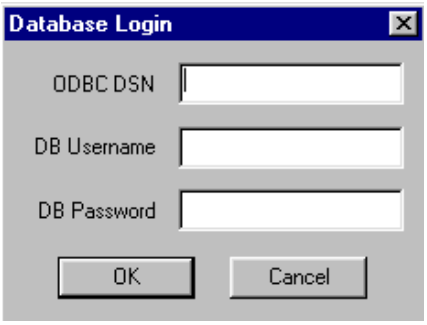
USING THE MIS TEST PROGRAM

The P2000 MIS Test Program enables you to perform various MIS tests, such as data queries, and adding, updating, and deleting cardholder records, to verify the P2000 receives the data and updates its database tables. This test can be useful when troubleshooting or simulating database integration issues with an external ODBC-based program.

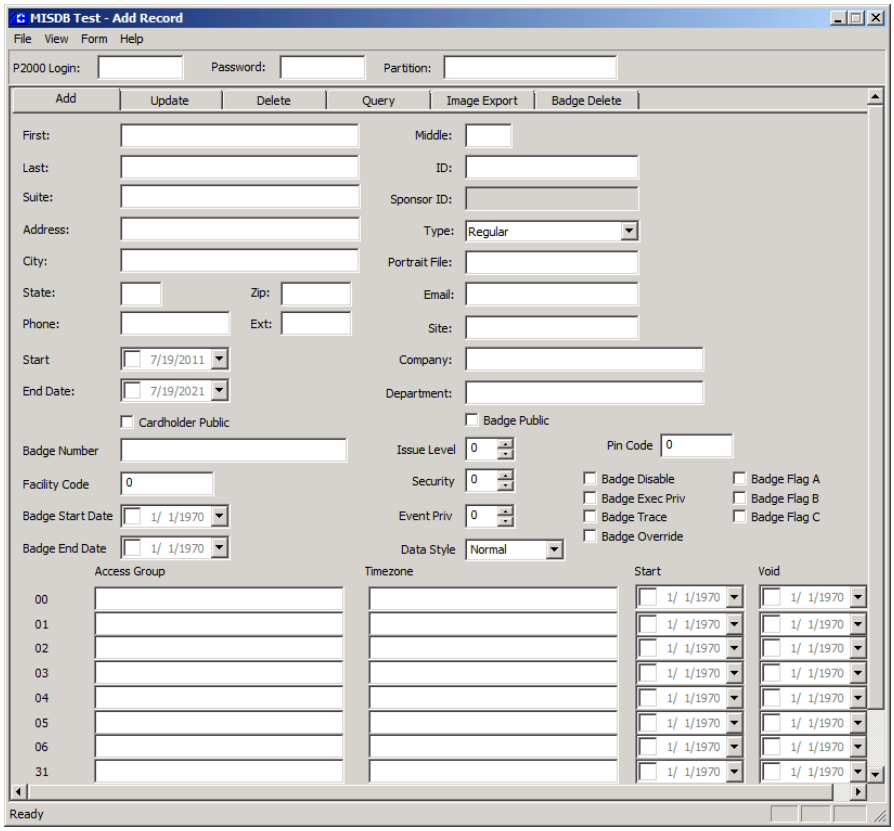
➤ To run the MIS Test Program:

1. Run the **MISDBTest.exe** application file located in:
   - **64-bit Windows Operating Systems:** *Local Disk:\Program Files\Johnson Controls (x86)\P2000\bin*
   - **32-bit Windows Operating Systems:** *Local Disk:\Program Files\Johnson Controls\P2000\bin*

   The Database Login dialog box appears.



2. In the **ODBC DSN** box, enter the data source name used to access the P2000 database.
3. In the **DB Username** box, enter the database user name for the MIS Interface.
4. In the **DB Password** box, enter the database password for the MIS Interface.
5. Click **OK**. The **MISDB Test** window appears.



6. In the **P2000 Login** box, enter the user name used to logging on to the P2000 system.
7. In the **Password** box, enter password used to logging on to the P2000 system.
8. In the **Partition** box, enter the partition for the Cardholder database you wish to create or append. If your system is not partitioned, enter Super User.
9. Select one of the command tabs (e.g. Add, Update, Delete, etc.).
10. Enter data values according to the command selected.
11. After entering the desired data, click the command button at the bottom of the window (e.g. Add, Update, Delete, etc.). This button varies according to the command tab selected at the top of the window.
12. Verify that the changes have occurred to the P2000 database. For example, if you added a cardholder record, verify the record now exists in the P2000 database.