

SoLink Control Server

For

Windows

Installation Guide

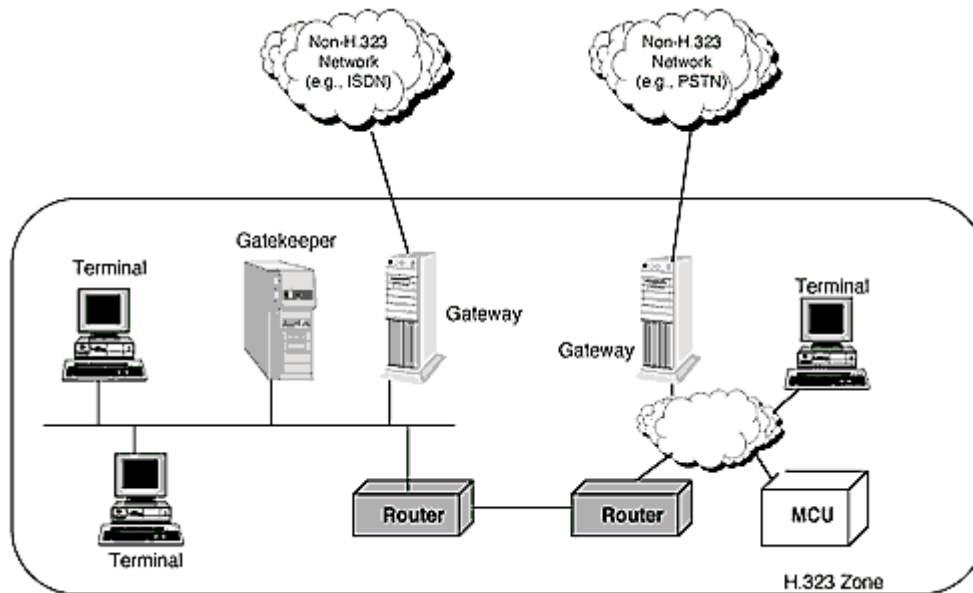
(Release 2.2)

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1.0 INTRODUCTION

SoLink Control Server is a feature-rich, Windows-based, H.323 v4 compliant gatekeeper with call logging and other advanced functions. It serves to manage the operation of various H.323 devices, including VoIP gateways (such as Cisco, Antek and Quintum), terminals (such as NetMeeting and other softphones), and other multimedia devices.



It provides the following functions:

- admission control
perform authorization checks on H.323 devices based on endpoints H323ID (and IP address)
- address translation
perform alias address to transport address translation
- zone management
perform management functions within its zone
- neighbour gatekeeper support
support routing to gateways / terminals associated with other gatekeepers
- alias address modification / dialed digit translation
return a modified alias address or translate dialed digits into E.164 number or a private network number
- call control signaling

support direct-route or gatekeeper-route model

- call authorization
authorize call request based on a number of criteria such as destination number dialed and resources available at destination
- call logging
provide logs to all calls; also support H.323 usage reporting capabilities.
- endpoint grouping
provide closed user group functionalities among related endpoints
- alternate routing
provide up to 3 routes for destination mapping
- database integration
can interface to Microsoft Access, Microsoft SQL Server, or other ODBC compliant databases
- management reporting
provide statistical reports for planning purpose

2.0 SYSTEM REQUIREMENTS

2.1 Hardware Requirements

The hardware requirements depend on the number of concurrent registered nodes, call volume and the call model used. In general, the following server configuration is recommended for typical use:

- at least 1.0 GHz Pentium processor
- 512 MB RAM
- 30 GB hard disk
- CDROM drive
- 10/100 BaseT Ethernet card
- UPS (uninterrupted power supply) recommended
- video card
- keyboard and mouse

2.2 Software Requirements

The following software should be installed:

- Microsoft Windows 2000 Professional (or Server) with service pack 4 or above, Microsoft Windows 2003, or Microsoft Windows XP Professional
- Microsoft Access 2000, Microsoft SQL Server, or MSDE (Microsoft database engine)
- a remote control software such as VNC or PCAnywhere (recommend)
- SoLink Control Server software

3.0 PREREQUISITE COMPONENTS

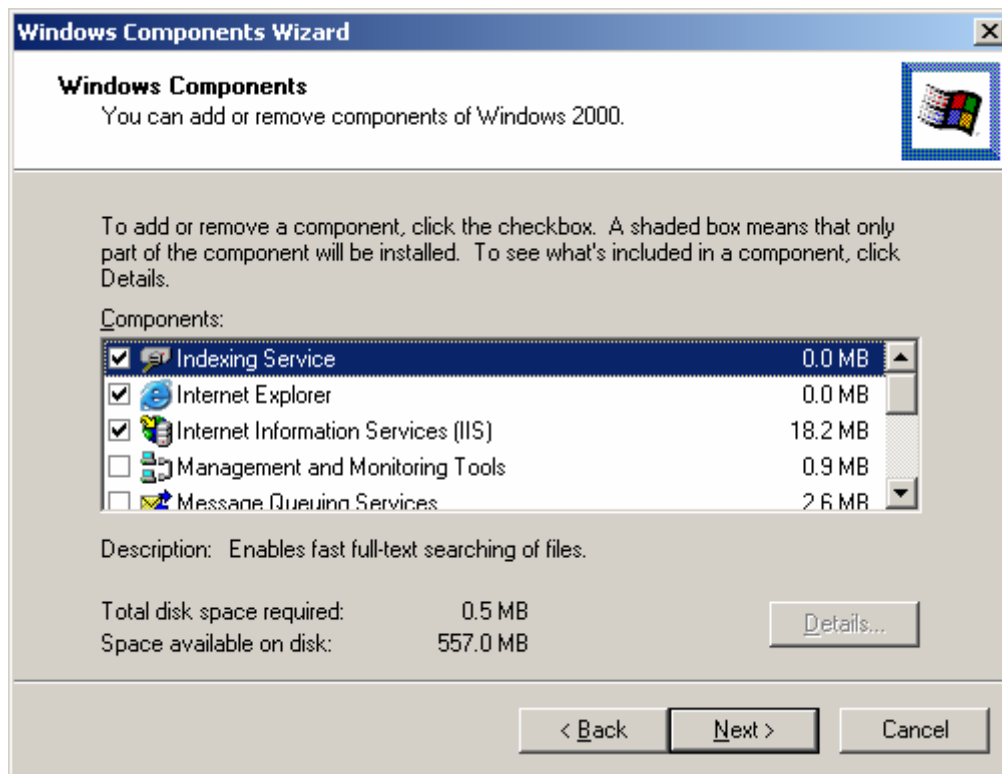
3.1 Database Support

Before installing the SoLink Control Server, one of the following databases must be installed.

- Microsoft Access
It is typically used for small-size system (i.e. < 100 endpoints).
- Microsoft SQL Server
It is typically used for large system. The administrator may choose to install Microsoft SQL Server on a separate server, and connect the SoLink Control Server via the client software if desired.
- Microsoft Database Desktop Engine (MSDE)
MSDE is a scaled-down version of Microsoft SQL Server, with no graphic administration interface. It can be downloaded from the Microsoft web site. A redistributable version of MSDE is also available in the installation CD. Please refer to the appendix for a detailed description of the installation and configuration.
- ODBC interface
ODBC is the most widely adopted standard for database connectivity. It can be used to connect to almost any commercial databases, such as Oracle, Microsoft SQL Server, DB2, Sybase, and MySQL.

3.2 Web Server Support

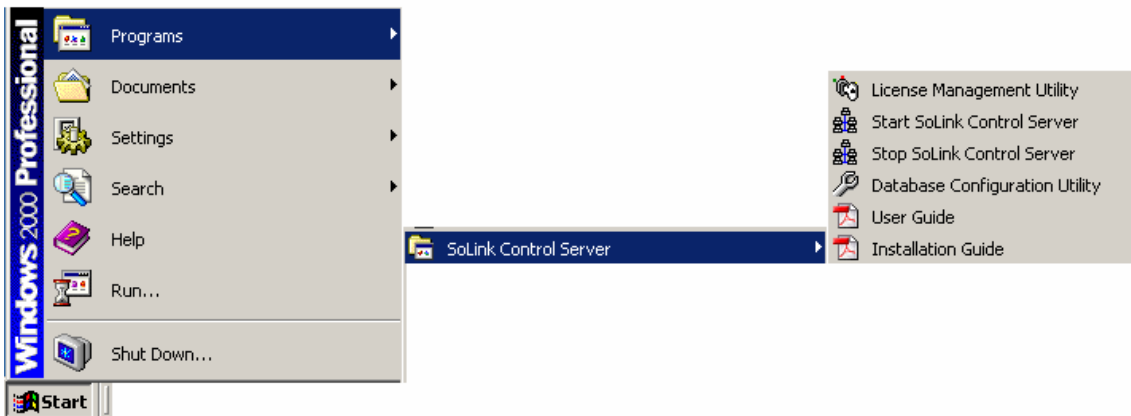
Make sure that Microsoft Internet Information Service has been installed. This can be done by starting **Add/Remove Programs** from the **Control Panel**. Then select **Add/Remove Windows Components**. The **Internet Information Services (IIS)** option should have already been checked. Click the **Cancel** button to exit.



4.0 INSTALLING SOLINK CONTROL SERVER

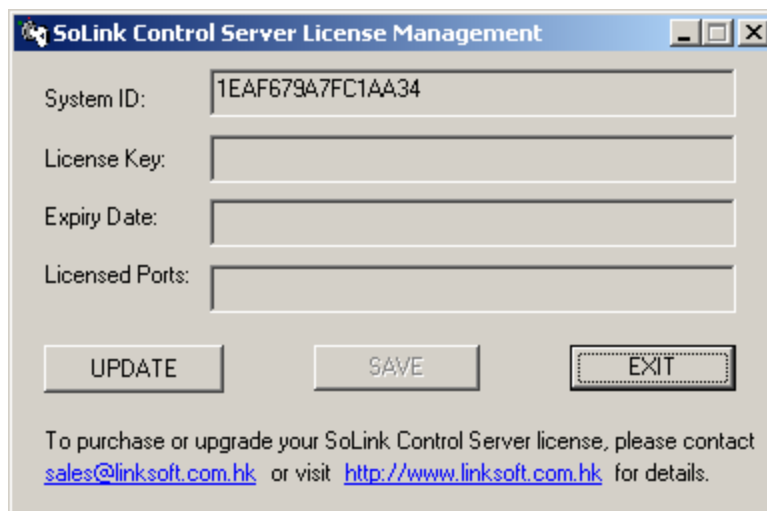
To install the SoLink Control Server software, run **setup.exe** under the **SoLink Control Server** directory from the installation CD. Follow the instruction from the installation program until completion.

The **SoLink Control Server** folder should be created as shown below:

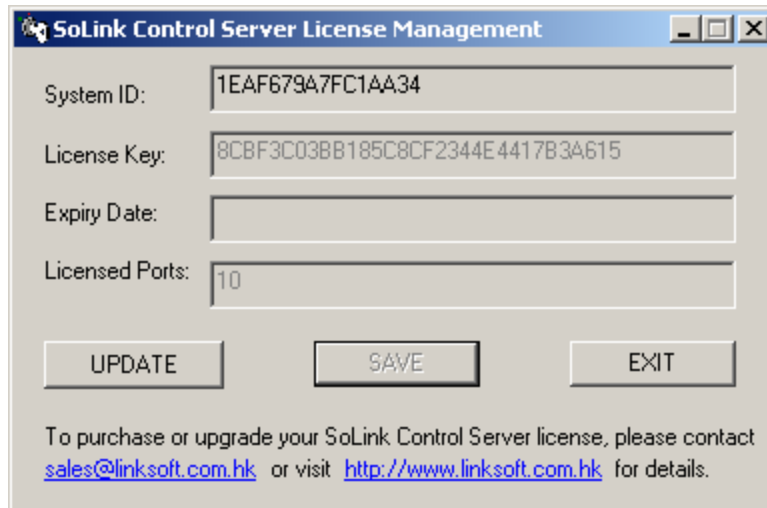


4.1 Activating the SoLink Control Server

The SoLink Control Server needs to be activated with a valid license key. At the end of the installation, the user will be prompted to enter the License Key. A **System ID** will be displayed on the screen.



Obtain the license key from your vendor (please provide your System ID). Then click the **UPDATE** button, enter the given **License Key**, and click the **SAVE** button. The licensing information will then be displayed on the screen and saved.



System ID: 1EAF679A7FC1AA34

License Key: 8CBF3C03BB185C8CF2344E4417B3A615

Expiry Date:

Licensed Ports: 10

UPDATE SAVE EXIT

To purchase or upgrade your SoLink Control Server license, please contact sales@linksoft.com.hk or visit <http://www.linksoft.com.hk> for details.

If a license key is not available at the time of installation, the administration may choose to temporarily bypass the license activation process by clicking the EXIT button. He will need to run the **License Management Utility** from the **SoLink Control Server** folder at a later time.

4.2 Configuring Databases

After the license activation process, the installation program will invoke the **Database Configuration Utility**. Note that it can also be invoked by selecting the **Database Configuration Utility** from the **SoLink Control Server** folder.

There are two databases used by the SoLink Control Server – the system database and the CDR database. The system database (named H323ControlServer) stores all system configuration information while the CDR database (named cdr) stores all call related information. The databases for Microsoft Access (i.e. H323ControlServer.mdb and cdr.mdb) and Microsoft SQL Server / MSDE (i.e. H323ControlServer.mdf and cdr.mdf) would be created upon system installation. If another commercial database is desired, the administrator should migrate the two databases to the desired platform and use ODBC as the database interface.

4.2.1 Interfacing to Microsoft Access

The Administrator should make sure that Microsoft Access has been installed in the server before continuing.

The screenshot shows the 'SoLink Database Configuration Utility' window. It is divided into two main sections: 'System Database Configuration' and 'CDR Database Configuration'. Each section contains the following fields and controls:

- System Database Configuration:**
 - Database Type: Microsoft Access (dropdown)
 - Database Server: (empty dropdown)
 - Database Name: C:\Program Files\Linksoft\SoLink Control Server\H323ControlServer.mdb (dropdown with browse button)
 - User ID: (empty text box)
 - Password: (empty text box)
 - Test Connection button
- CDR Database Configuration:**
 - Database Type: Microsoft Access (dropdown)
 - Database Server: (empty dropdown)
 - Database Name: C:\Program Files\Linksoft\SoLink Control Server\cdr.mdb (dropdown with browse button)
 - User ID: (empty text box)
 - Password: (empty text box)
 - Test Connection button

At the bottom of the window, there are three buttons: 'SAVE', 'EXIT', and 'Configure ODBC'.

To select Microsoft Access as the system database engine, enter the following fields in the **System Database Configuration** area:

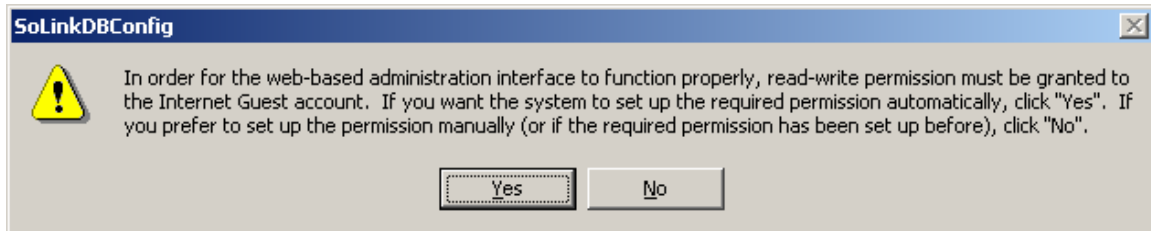
1. Select **Microsoft Access** as the **Database Type**.
2. Select the **Database Name**. By default, it should be H323ControlServer.mdb from the installed directory. If the database file has been moved to another directory, click the ... button at the right and select the desired file.
3. Enter the **User ID** and **Password** for the database. By default, no user ID and password are defined for Microsoft Access database.
4. Click the **Test Connection** button to test the database connection. It should respond with a "Logon successful" message.

To select Microsoft Access as the CDR database engine, enter the following fields in the **CDR Database Configuration** area:

1. Select **Microsoft Access** as the **Database Type**.
2. Select the **Database Name**. By default, it should be cdr.mdb from the installed directory. If the database file has been moved to another directory, click the ... button at the right and select the desired file.

3. Enter the **User ID** and **Password** for the database. By default, no user ID and password are defined for Microsoft Access database.
4. Click the **Test Connection** button to test the database connection. It should respond with a “Logon successful” message.

Press the **SAVE** button to save the database configuration.

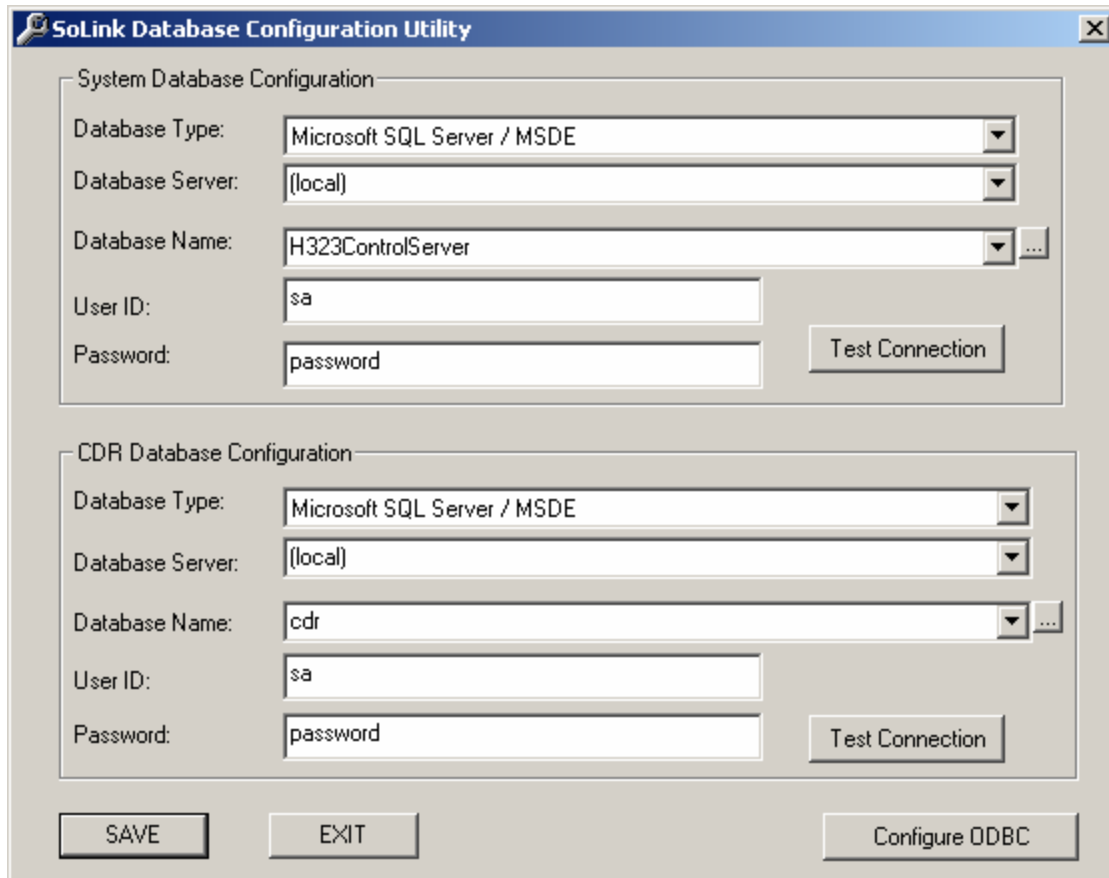


To set up the proper permission for the web user to access the database, “Full Control” permission to the installed directory (e.g. c:\program files\linksoft\solink control server) must be granted to the Internet Guest Account (typically IUSR_<machine name>). The user may choose to have the system set up the required permission automatically by clicking “Yes” button.

Then exit the program by pressing the **EXIT** button.

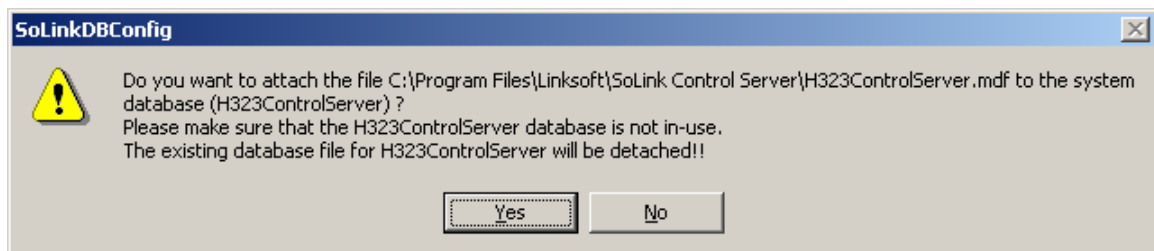
4.2.2 Interfacing to Microsoft SQL Server or MSDE

The Administrator should make sure that Microsoft SQL Server or MSDE has been installed in the server before continuing.



To select Microsoft SQL Server / MSDE as the system database engine, enter the following fields in the **System Database Configuration** area:

1. Select **Microsoft SQL Server / MSDE** as the **Database Type**.
2. Select the **Database Server**. If Microsoft SQL Server or MSDE is installed in the same server, then **(local)** should be selected.
3. Select the **Database Name**. By default, the database name should be **H323ControlServer**. When the system is first installed, we need to manually define the H323ControlServer database by clicking the ... button at the right. Select the database file **H323ControlServer.mdf** from the install directory (or another directory as desired) and then click the **Open** button. A warning message will be displayed on the screen.

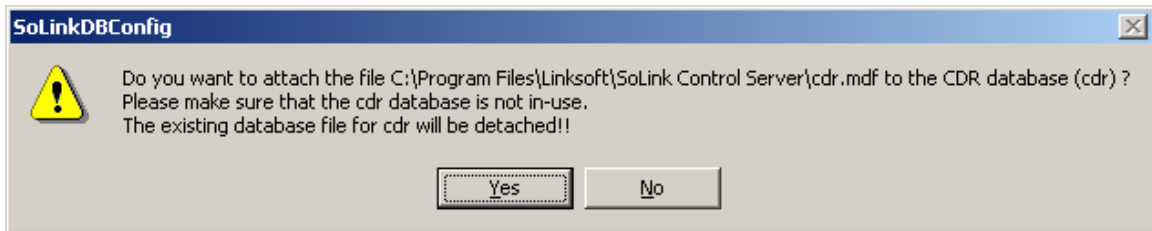


Press the **Yes** button to proceed with the change. Upon successful completion, the H323ControlServer database will be defined and attached to the specified file.

4. Enter the **User ID** and **Password** for the database. If Windows Authentication is enabled, it is not necessary to enter the User ID and Password.
5. Click the **Test Connection** button to test the database connection. It should respond with a “Logon successful” message.

To select Microsoft SQL Server / MSDE as the CDR database engine, enter the following fields in the **CDR Database Configuration** area:

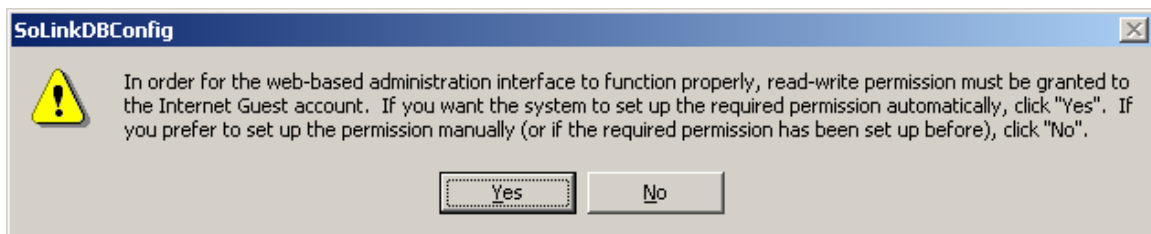
1. Select **Microsoft SQL Server / MSDE** as the **Database Type**.
2. Select the **Database Server**. If Microsoft SQL Server or MSDE is installed in the same server, then **(local)** should be selected.
3. Select the **Database Name**. By default, the database name should be **cdr**. When the system is first installed, we need to manually define the H323ControlServer database by clicking the ... button at the right. Select the database file **cdr.mdf** from the install directory (or another directory as desired) and then click the **Open** button. A warning message will be displayed on the screen.



Press the **Yes** button to proceed with the change. Upon successful completion, the cdr database will be defined and attached to the specified file.

4. Enter the **User ID** and **Password** for the database. If Windows Authentication is enabled, it is not necessary to enter the User ID and Password.
5. Click the **Test Connection** button to test the database connection. It should respond with a “Logon successful” message.

Press the **SAVE** button to save the database configuration.



To set up the proper permission for the web user to access the database, read-write access to the databases must be granted to the Internet Guest Account (typically IUSR_<machine name>). The user may choose to have the system set up the required permission automatically by clicking “Yes” button.

Then exit the program by pressing the **EXIT** button.

4.2.3 Interfacing to ODBC

The ODBC option allows the SoLink Control Server to use any ODBC compliant databases. The Administrator should make sure that the desired database platform has been installed in the server and the two databases – H323ControlServer and cdr – be created before continuing. Usually, it is easier to migrate the installed database files (in Microsoft Access format or SQL Server format) to the desired database format.

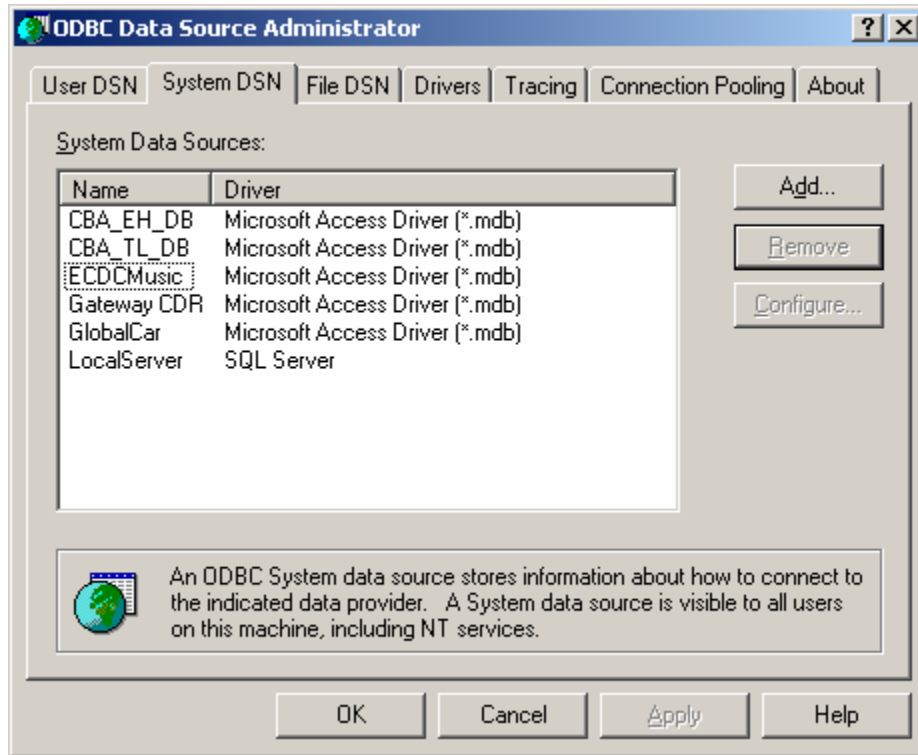
The screenshot shows the 'SoLink Database Configuration Utility' window. It is divided into two main sections: 'System Database Configuration' and 'CDR Database Configuration'. Each section contains the following fields:

- Database Type: ODBC Connection (dropdown)
- Database Server: (empty dropdown)
- DSN: H323ControlServer (dropdown)
- User ID: (empty text box)
- Password: (empty text box)

There are 'Test Connection' buttons next to the 'User ID' and 'Password' fields in both sections. At the bottom of the window are buttons for 'SAVE', 'EXIT', and 'Configure ODBC'.

To select **ODBC Connection** as the system database engine, enter the following fields in the **System Database Configuration** area:

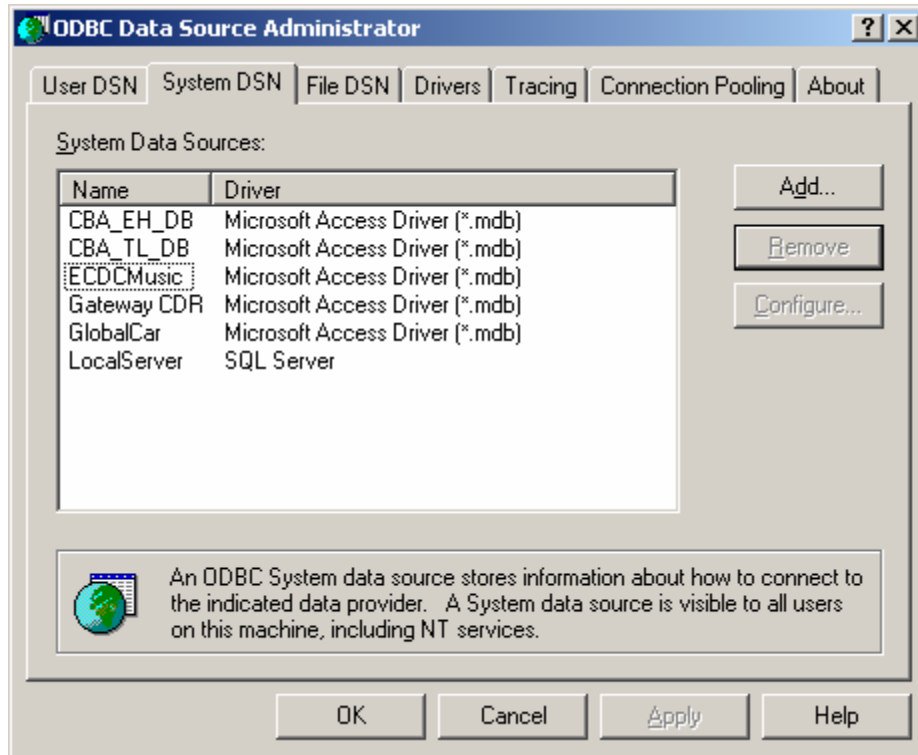
1. Define the ODBC DSN (data source name) for **H323ControlServer**. This can be done by clicking the **Configure ODBC** button on the screen. This will invoke the ODBC Data Source Administrator utility. Add the System DSN “H323ControlServer” with all necessary parameters.



2. Select **ODBC Connection** as the **Database Type**.
3. Select **H323ControlServer** as the **DSN**.
4. Enter the **User ID** and **Password** for the database.
5. Click the **Test Connection** button to test the database connection. It should respond with a “Logon successful” message.

To select **ODBC Connection** as the CDR database engine, enter the following fields in the **CDR Database Configuration** area:

1. Define the ODBC DSN (data source name) for **CDR**. This can be done by clicking the **Configure ODBC** button on the screen. This will invoke the ODBC Data Source Administrator utility. Add the System DSN “CDR” with all necessary parameters.



2. Select **ODBC Connection** as the **Database Type**.
3. Select **CDR** as the **DSN**.
4. Enter the **User ID** and **Password** for the database.
5. Click the **Test Connection** button to test the database connection. It should respond with a "Logon successful" message.

Press the **SAVE** button to save the database configuration. Then exit the program by pressing the **EXIT** button.

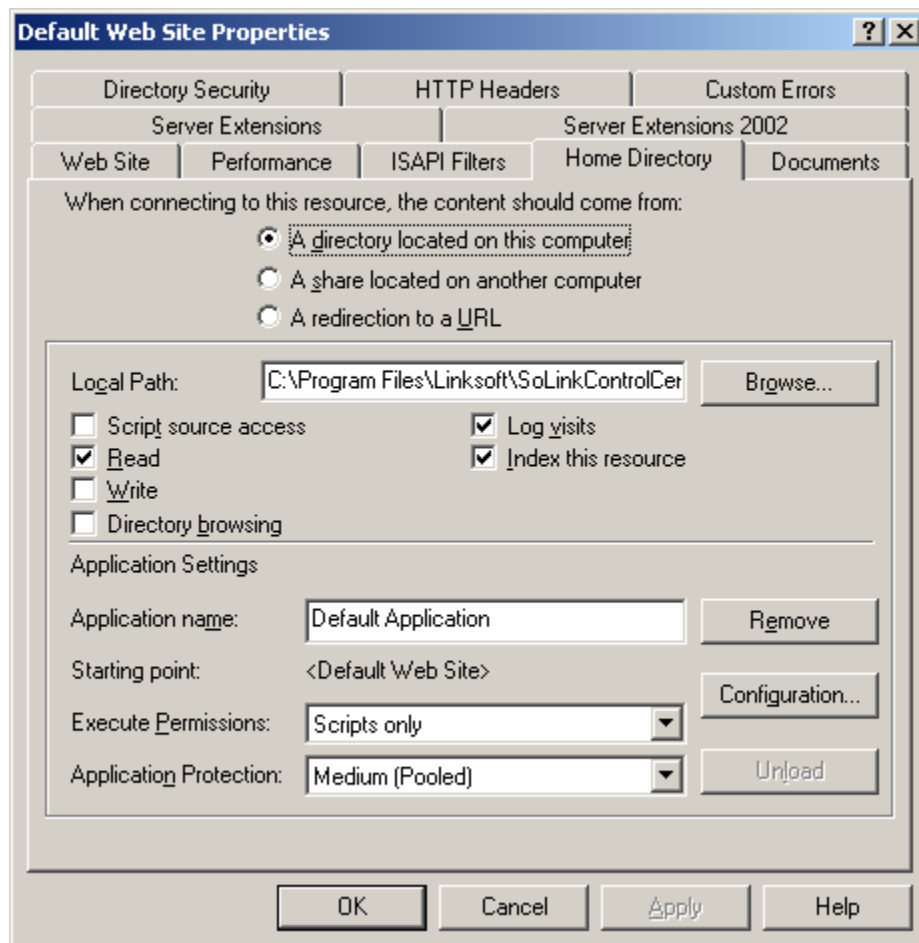
5.0 CONFIGURING SOLINK CONTROL CENTER

SoLink Control Center is the web-based administration interface for the SoLink Control Server.

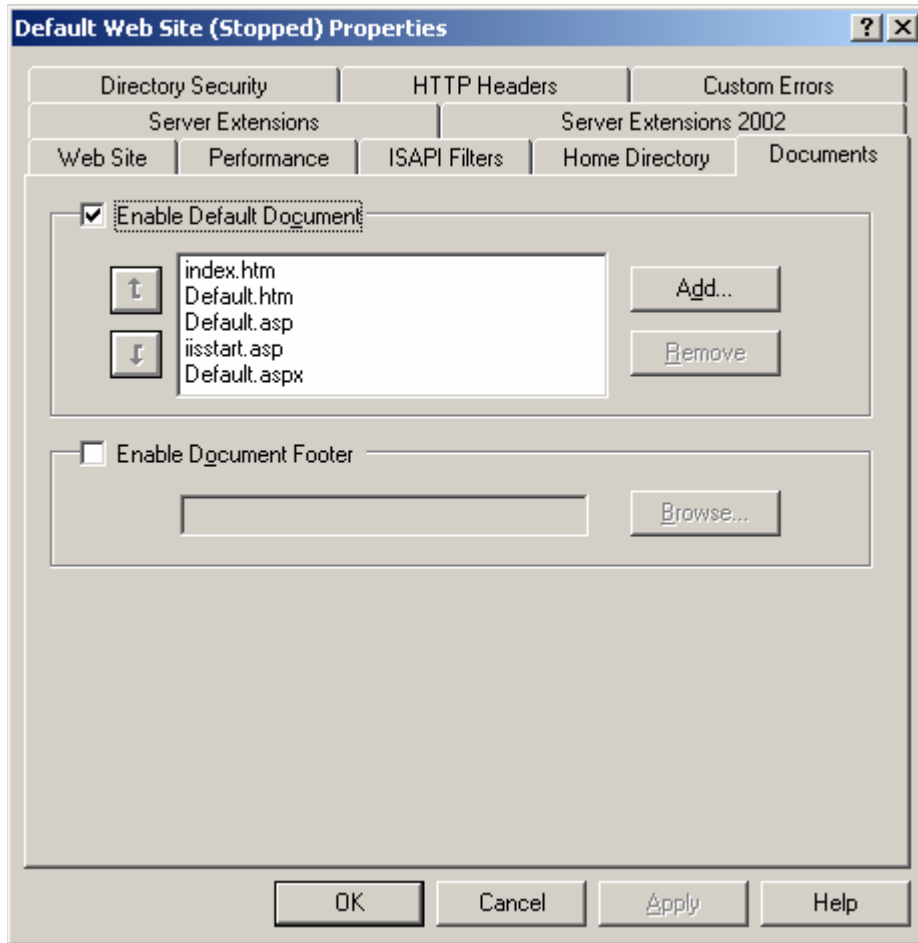
After the SoLink Control Center has been installed, the web server needs to be configured. In general, one may use any web server that support ASP and JavaScript, such as Microsoft IIS (Internet Information Server).

The following steps apply to setting up the web server using Microsoft IIS:

1. Go to **Control Panel**, select **Internet Services Manager** under the **Administrative Tools** folder.
2. From the left panel, right click on the **Default Web Site** option and select **Properties** from the pop-up menu. The **Default Web Site Properties** screen will be displayed.
3. Click on the **Home Directory** tab, and the following screen will be displayed.



4. In the **Local Path** field, select the directory where the SoLink Control Center was installed (default is c:\Program files\Linksoft\SoLinkControlCenterWeb).
5. Modify other parameters as necessary.
6. Click on the **Documents** tab, and the following screen will be displayed.



7. Add **index.htm** to the default document list if it is not existed.
8. Click the **OK** or **Apply** button to update the changes. This will go back to the main Internet Information Services screen.
9. Right click on the **Default Web Site** and select the **Start** option to start the web server.

6.0 TESTING SOLINK CONTROL SERVER

The system database has been preconfigured with the typical configuration information (i.e. use direct-route model with local CDR option enabled). The default configuration also allows any H.323 compliant devices to register to the gatekeeper (the administrator should disable or remove this option for a production system).

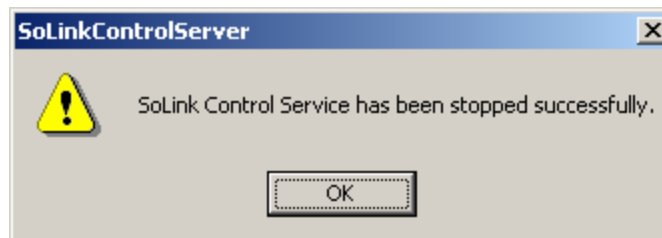
Test the SoLink Control Server by selecting the **Start SoLink Control Server** option from the **SoLink Control Server** folder. The following message will be displayed on the screen upon successful completion.



If the SoLink Control Server cannot be started, check the Window's Event Viewer and the log file (H323ControlServer.log under the log directory <log dir>\yymmdd directory) for details.

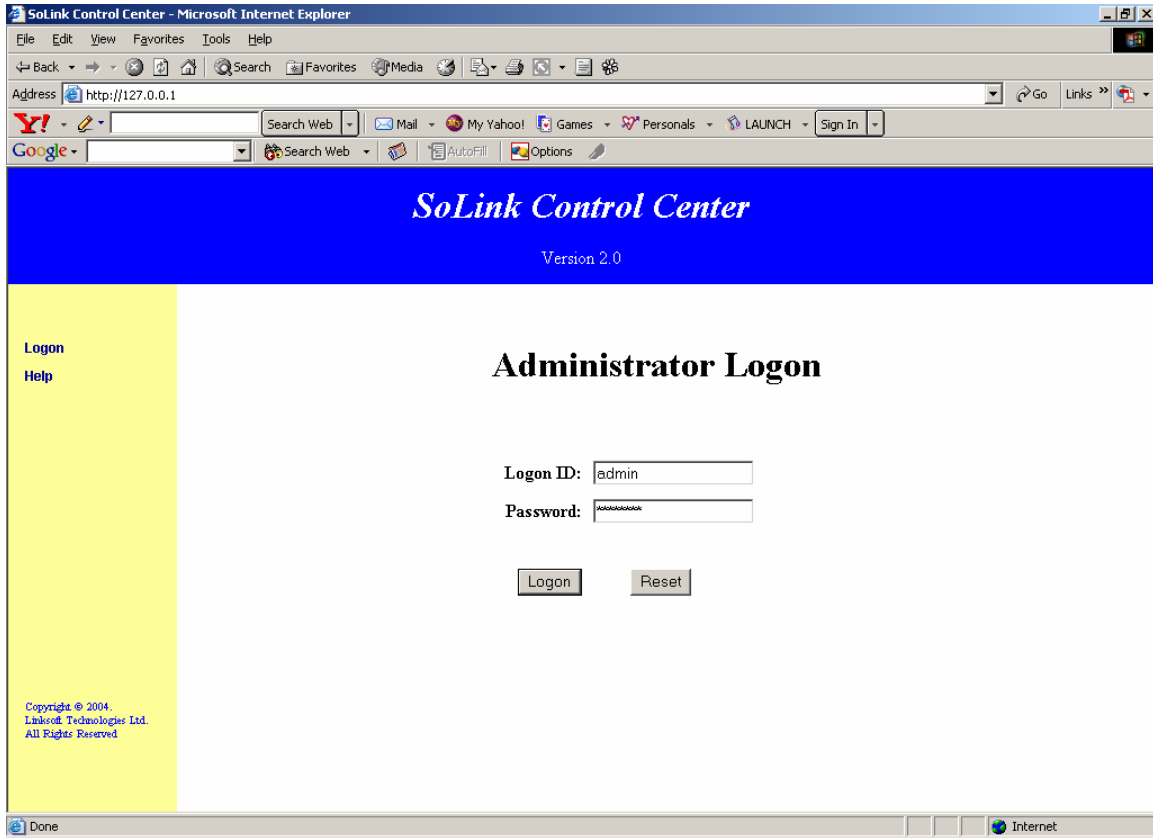
If desired, set up two H.323 compliant devices (such as NetMeeting or other VoIP gateway) to register to the SoLink Control Server, and try making calls from one device to the other.

To stop the SoLink Control Server, select the **Stop SoLink Control Server** option from the **SoLink Control Server** folder. The following message will be displayed on the screen when completed.

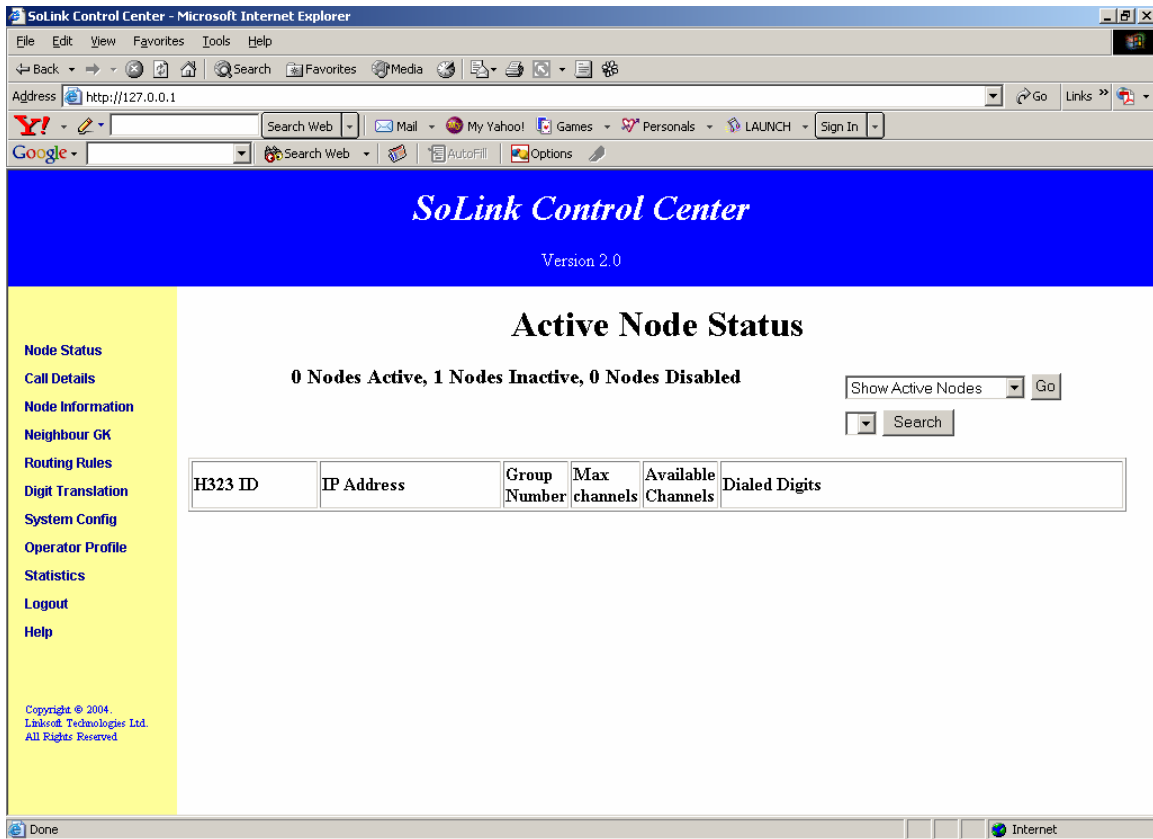


7.0 TESTING THE SOLINK CONTROL CENTER

From an Internet browser such as Internet Explorer, go to the URL of the web site. The logon screen should appear:



Enter the default logon ID (admin) and Password (password) and click the **Logon** button. If logon is successful, the main menu with the **Node Status** screen should be appeared as follows:

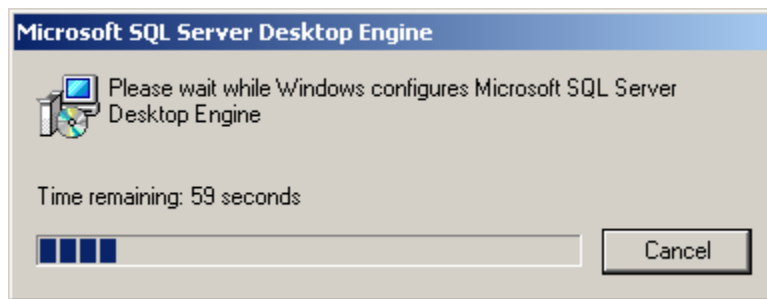


Click the **Logout** option to go back to the **Logon** screen.

APPENDIX A INSTALLING MSDE

To install MSDE (Microsoft Desktop Database Engine), simply follow the steps below:

1. Open the **Command Prompt** window under the **Accessories** folder.
2. Go to the MSDE directory. For example, if the installation is in E drive, type
C:\> **e: <ENTER>**
E:\> **cd MSDE <ENTER>**
3. Type **setup.exe securitymode=SQL sapwd=<system admin's password>**. For example if the system administrator's password is password, then type the following:
setup.exe securitymode=SQL sapwd=password <ENTER>
4. The following window will appear on the screen until completion of the installation process.



5. Go to **Control Panel -> Administrator Tools -> Services**.
6. Start the **MSSQLServer** Service by right-clicking the service option, then select the **Start** option. It should show the **Started** status upon completion.

