Welcome to XLink ClusterReplica Enterprise

ClusterReplica Enterprise, based on CDP technology, combines conventional High Availability solutions and Microsoft DPM-like functions to create the next generation of business continuity software with main features as listed in the following:

- Promotes data manageability by using Replication Templates for data replication. The two default templates are for MS SQL database and IIS web server files. User self-defined templates are also supported.
- Smartly utilizes the CDP technology to replicate modified data instantly and rollback to multiple previous states at a file level or the entire data image level.
- Keeps up to 64 versions of data image so that if the current data image is corrupted, it will look into the previous versions until a good data image is found. Failover is thus 100% ensured successful.
- The Microsoft DPM-like style of handling the replicated data allows end-user to retrieve archived files in self-service fashion.
- Offers the flexibility in functionalities and scaling: to fit the needs specifically for the small and medium companies, ClusterReplica Enterprise supports MS SQL and IIS Web server functions in one package. Starting from one or two servers, more systems can be added into the clustering without affecting the existing infrastructure.

How ClusterReplica Enterprise Works

Some terminologies involved using ClusterReplica Enterprise are introduced here.

1. The **Primary Master** - It is the station in a ClusterReplica Structure that manages the entire Clustering. From the Primary Master station, you can
   - Add and remove Replica Member stations in the clustering
   - Define data Replication Set for real-time data replication
   - Configure and initiate A Failover
   - Perform role-switch to transfer the role of the Primary station to another station in the clustering
   - Function as a Replica Member to receive data from a Repli-Master station

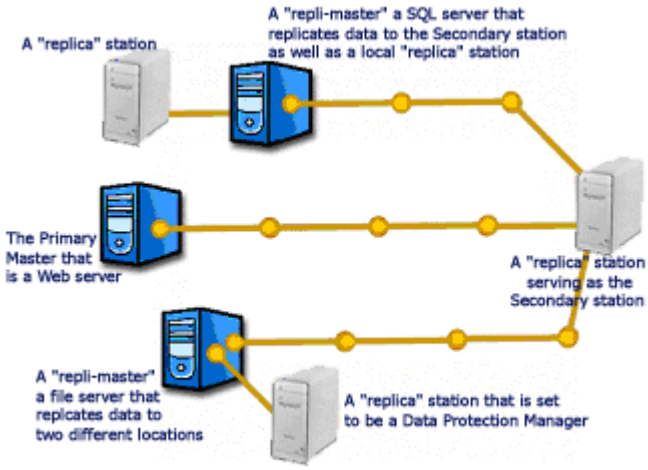
   While mainly function as the data source for data replication, it can also be used as a Replica Member station to take in data from other data source stations.

2. A **Repli-Master** - It is a **Master** station without the management power and the configuration rights. While mainly function as the data source for data replication, it can also be used as a Replica Member station to take in data from other data source stations. A Repli-Master can also be used as a Secondary station for failover.

3. A **Replica Member** - It is a data replication destination system that takes in new data from a **Master** system for data protection purposes. It can be also configured as a **Data Version Management** station to allow network end users self manage data files remotely.

4. The **Secondary Station** - It is a **Replica Member** with an additional role: the failover target. There can be only one Secondary station in a ClusterReplica Structure to pair up with the Primary station for failover. A Secondary station can also be a Repli-Master station to initiate

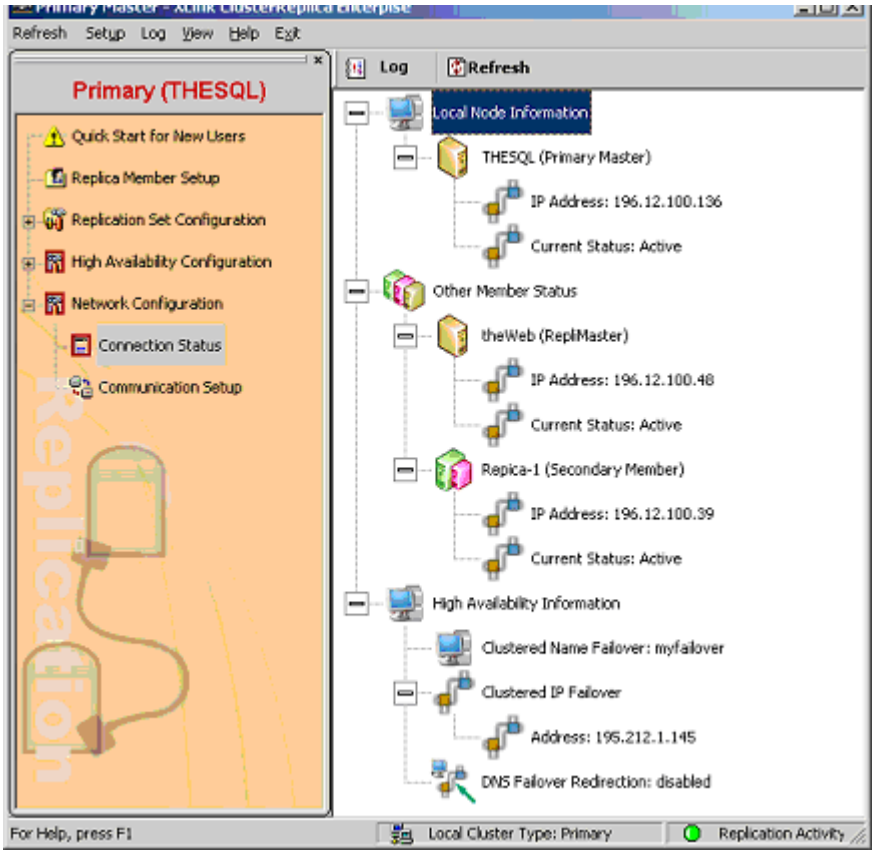
data replication.



From its main configuration screen, the three major parts to be configured are listed in the main menu:

1. **Replica Member Setup** - to add Replica Member stations to the ClusterReplica Structure
2. **Replication Set Configuration** - to define Data Replication Sets for real-time data replication
3. **High Availability Configuration** - to define the Secondary station and setup failover for server 24x7 availability
4. **Network Configuration** - to define communication configurations between the Primary Master station and the Replica Member stations

They suggest the main functions of the software. ClusterReplica Enterprise is a software that combines the common applications of Data Protection and Server Availability that fits the special needs of small and medium businesses.



System Requirements and Tips

ClusterReplica Enterprise provides a complete data protection and server available solution of corporate standard to the small and medium businesses with simple installation and automatic setup of data replication path lists. ClusterReplica Enterprise not only handles failover automatically to guarantee server 24x7 availability, it also manages real-time data replication with schemes of one-to-many and many-to-one to local and remote destinations.

- **System Requirements**
  - Two Microsoft Windows systems of 2000/XP/2003 platforms with ethernet connection
  - RAM: 128MB or above
  - Hard disk: 8GB or larger

- **If MS SQL database files are to be replicated**

  If MS SQL database files are to be replicated, it is required that all non-default database structures must be pre-set on the Secondary server **identical** to the database structures on the Primary station before installing of ClusterReplica software.

- **Tips: Using one or two network cards**
  - **General concept**
    - A cluster server binds two or more computer systems together to function as one. The clustered systems need to communicate with each other. At the same time, one of them will take up the responsibility to server the network clients. This

setting requires internal communication between the clustered servers as well as external communication between the server and the network clients.

- To distinguish the two types of communication, ClusterReplica Enterprise introduces the concept of :
  1. **Control IP** - that handles the internal communication between the clustered servers
  2. **Cluster IP** - that deals with public connection requests running on a Windows virtual IP and is always attached to the Primary station

- **One network card or two?**
  - **One network card** - If the systems you are going to install ClusterReplica Enterprise each has one network card, this means the cluster server operates with both internal and external communications moving within one subnet.

    In this situation, the cluster internal communication tangles up with the server clients communication. The workload on the communication channel can be constantly overloaded. There is also the concern of data processing speed and data transfer security.

  - **Two network cards** - By installing two network cards on each of the clustered systems, the internal and external communications are separated. One set of IPs can then be devoted strictly to the internal communications of the clustered systems without the interference of the public network traffic.

    For example:

    system1: 123.123.123.10, 195.2.1.74
    system2: 123.123.123.16, 195.2.1.75

    The 123 subnet is to be used for clustered systems internal communication, and the 195 subnet is to be used for server/clients connection.

    The effect on this setting of two network cards is remarkable. From security standpoint, the separation of the internal and external traffic on the cluster server eliminates the possibility of public interference of the servers internal activities. Now, data transfer security is ensured.

    With the same footing, the improvement of server performance in the eyes of network clients can also be notable. First, with two subnets, network traffic is reduced. Secondly, each set of IP addresses devoted to specific tasks, efficiency increased.

A Quick Installation Guide

Before installation, three things require some special attention:

1. The ClusterReplica package is to be installed on all systems intended for the clustering structure.

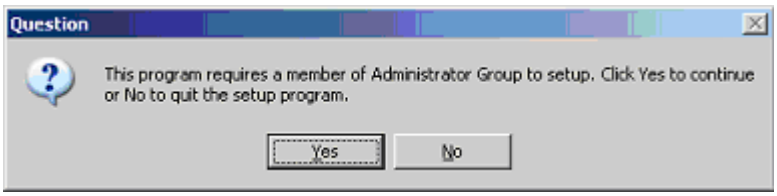
2. No **system reboot** is required for Windows 2003 and XP systems, but for Windows 2000, system reboot is required.

3. All installations are by default 30-day demo packages. To validate the ClusterReplica structure, please type in the license code in **Start/All Programs/Xlink ClusterReplica Enterprise/License Manager.**

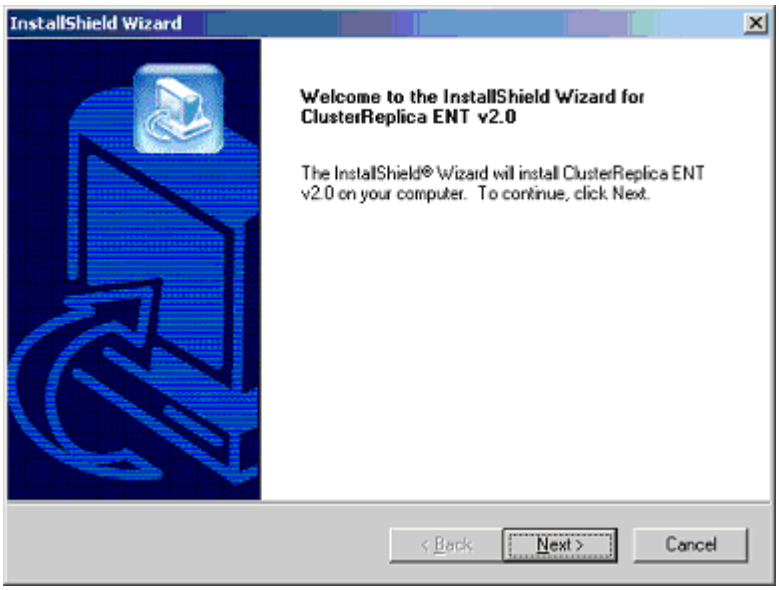
   Validation needs to be done only on the Primary Master. Please make sure the number of Replica Member stations defined matches (or less than) the purchased Replica stations number in the license.

Installing ClusterReplica Enterprise is easy. Double click the downloaded file image to start the installation process.

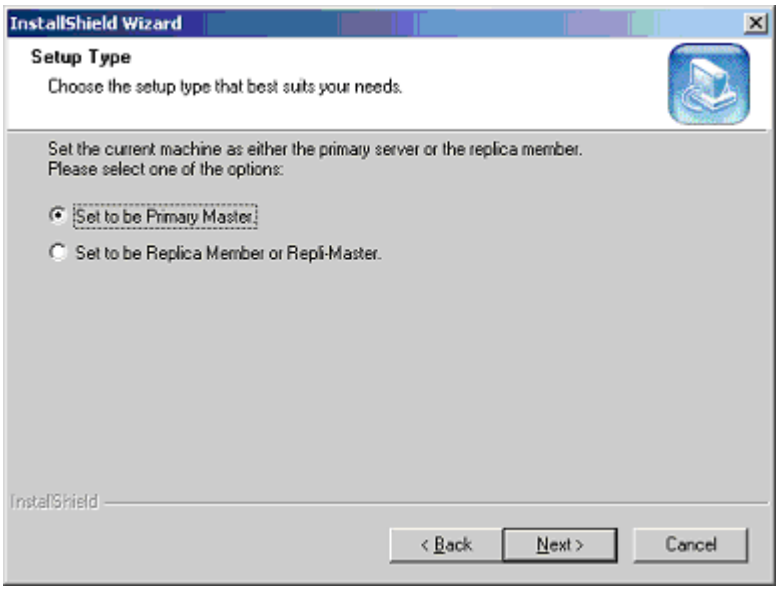
- The first thing comes up is the reminder that making sure you are loging in the system as the "administrator" to run the installation.



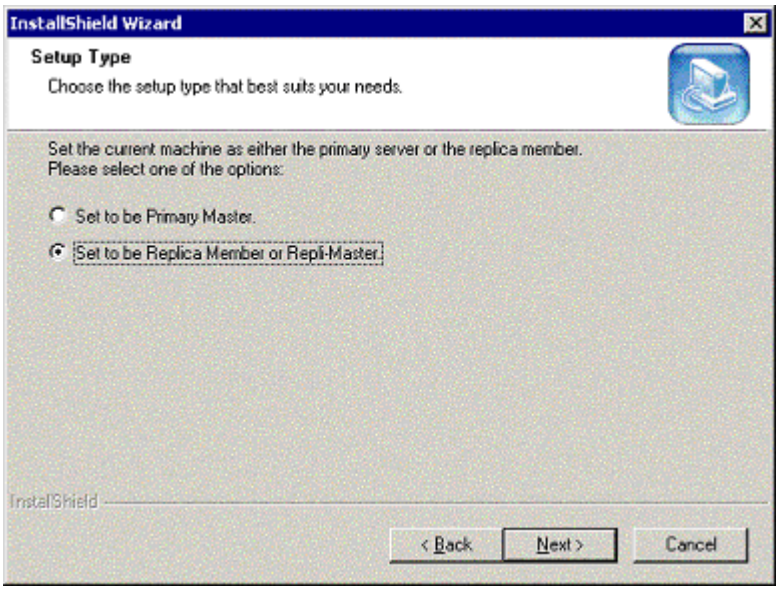
- If **Yes** the next screen comes up to make sure you have downloaded the right product and it is the one you want to install.



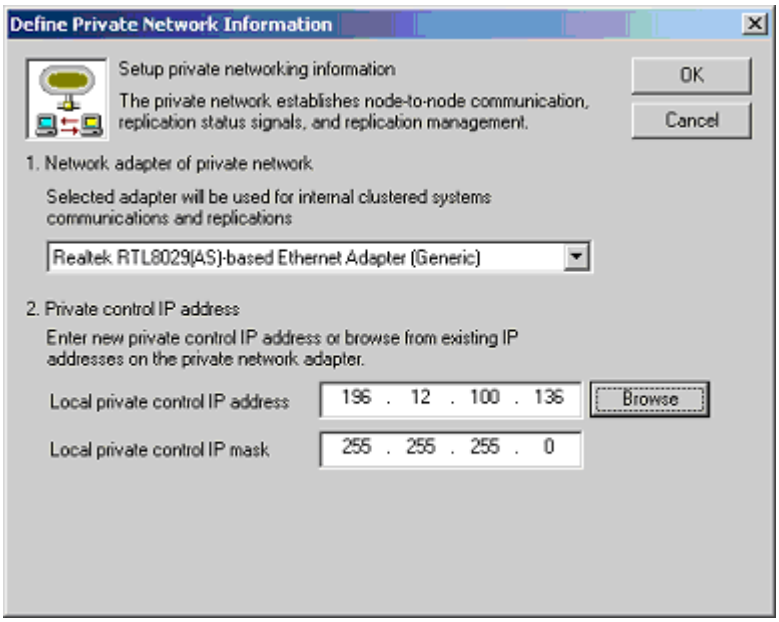
- The next screen presents the **License Agreement** for end-users. Please read it carefully and make sure you understand all terms listed. If all terms acceptible to you, click **Yes** to proceed with the installation. Otherwise, click **No** to abort the installation.



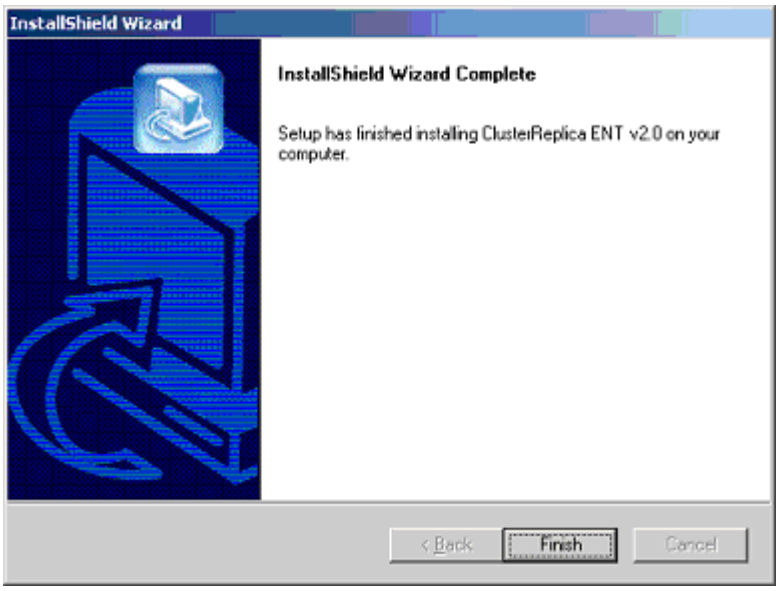
- The next step in installation requires you to decide if you want to use the system as the **Primary Master** or a **replica**. There can be only **one** Primary Master in each clustering.



- Clink **Next** to set IP for the communication between the clustering members. If two network cards in the **Primary Master** and the **Secondary** station are to be used for data replication and failover, this IP is the one to be used for data replication. (It is recommended that the two cards have IPs in different subnet.)



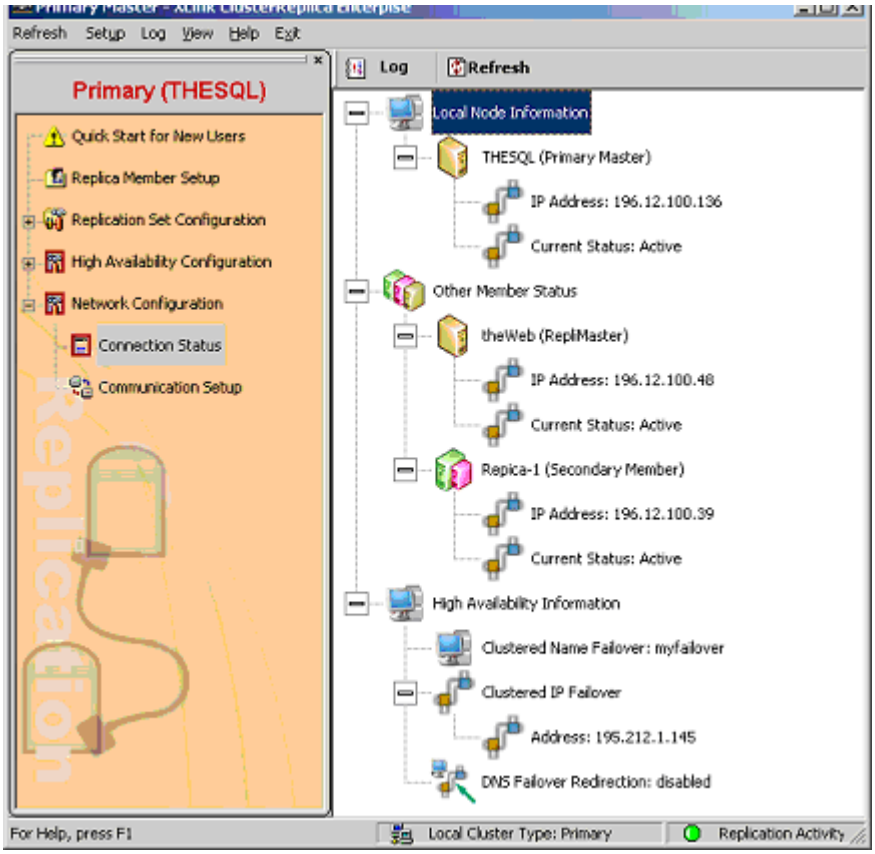
- Moving along with the installation, you will see the last screen of completion in installation. Click **Finish** to complete the installation process.



Configure ClusterReplica Enterprise

With ClusterReplica Enterprise installed, a Windows 2003/XP/2000 system can take up the role of a **Primary Master**, a **Repli-Master**, a **replica member** or a **Secondary station**. Because all configurations are done on the **Primary Master**, it is logical to setup the **Primary Master** first in the clustering structure.

Successful installation of a **Primary Master** will bring up the main user-interface as shown below:



This user-interface is divided into three panels:

1. **The Navigation Menu** - the main configuration menu on the left.
2. **The display panel on the right** - to show details of a function corresponding to the function selected in the main menu.
3. **The menu bar on the top** - provide some additional tools for configuration and operational functions.

A more detailed explanation on understanding and using this main screen can be found below.

1. **The Navigation Menu**

   The main selections in this menu break up the configuration area for easy setup

   1. **A Quick Start for New Users guide** is included to give summarized information on how to start configuring ClusterReplica Enterprise

   2. **Replica Member Setup** - This is the first thing to do to use ClusterReplica Enterprise and build the ClusterReplica structure for data protection and server high availability purposes

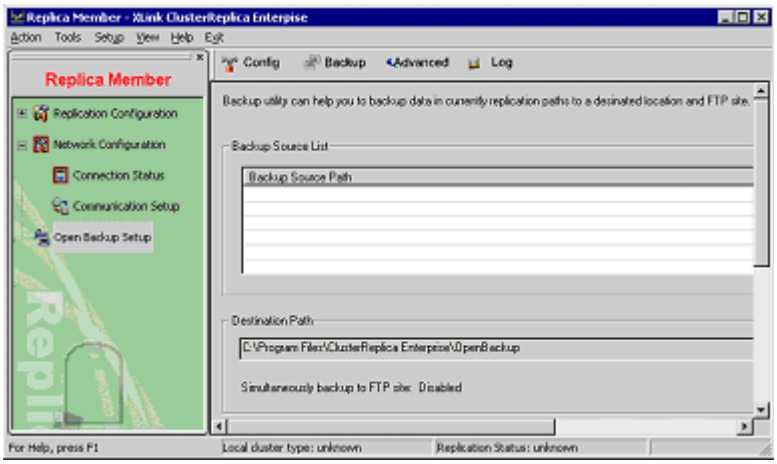
   3. **Replication Set Configuration**
      - Replication Set Status - to display data replication status
      - Replication Set Setup - to add, delete **Replication Sets** for real-time data replication.

   4. **High Availability Configuration**
      - Failover/Failback Configuration - to define the Secondary station, and the cluster name and cluster IP to be used for public connection.

- Failover Monitored Service - to add application services to the monitored list for Failover screening.
- File Sharing Setup - to activate the shared drive/folder on the Secondary station in the event of a Failover.

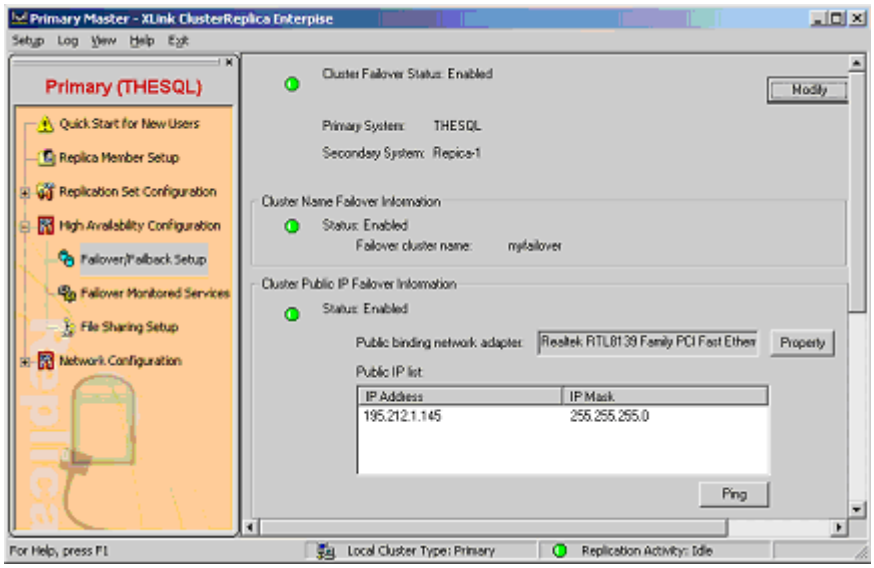
5. **Network Configuration**
   - Connection Status - to display replica member configurations and their connection status.
   - Communication Setup - to setup port, IP and related configurations for communication usage between the Primary Master and the replica members.

6. **On the replica member** stations, there is also the Open File Backup configuration



2. **The display panel on the right**

   With the selection of a configuration choice, different display panels are presented. Following example showing the display panel of the Failover Setup.



3. **Buttons on the menu bar**

These are the buttons on the top menu bar. The ones that are often used are:

- Under **Replication Set Configuration**
  - **Action** - The Define Replication Set Template selection is to help you define new template for data replication configurations.

- There are also some common buttons that can be seen under any function selection
  - **Setup** -
    1. Switch Cluster Role - to assist users switch roles of the Primary and Secondary stations manually when needed.

    2. email alert - The email alert selection is to notify the responsible staff to the issues related to the operation of the clustering server.

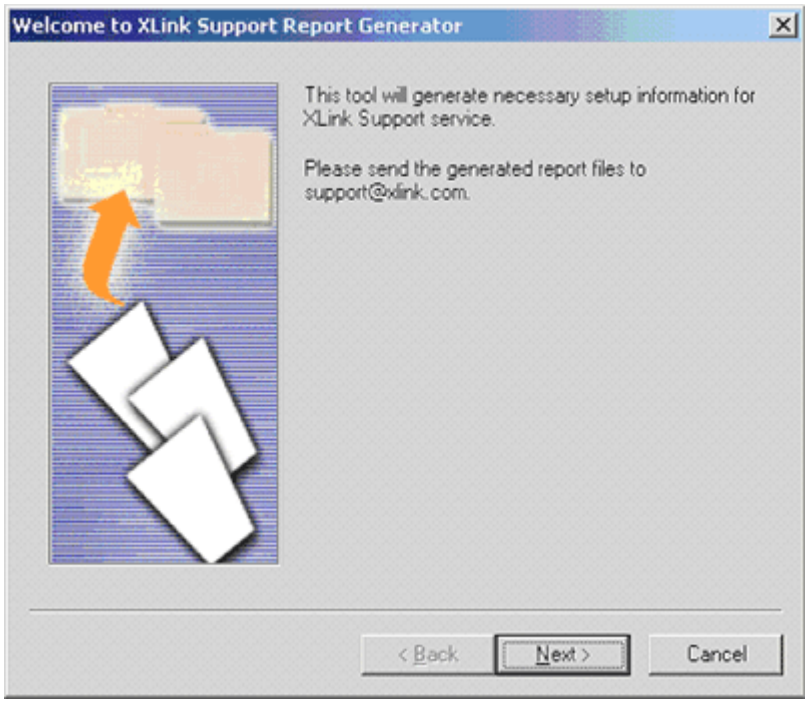
    3. Application DataSync Utility - The Application DataSync Utility is a tool to assist users update files from one location to another on a **Replica Member** station.

    4. IIS Configuration Importer - The IIS Configuration Importer is a tool to assist users update IIS Web server configurations on a **Replica Member** station.

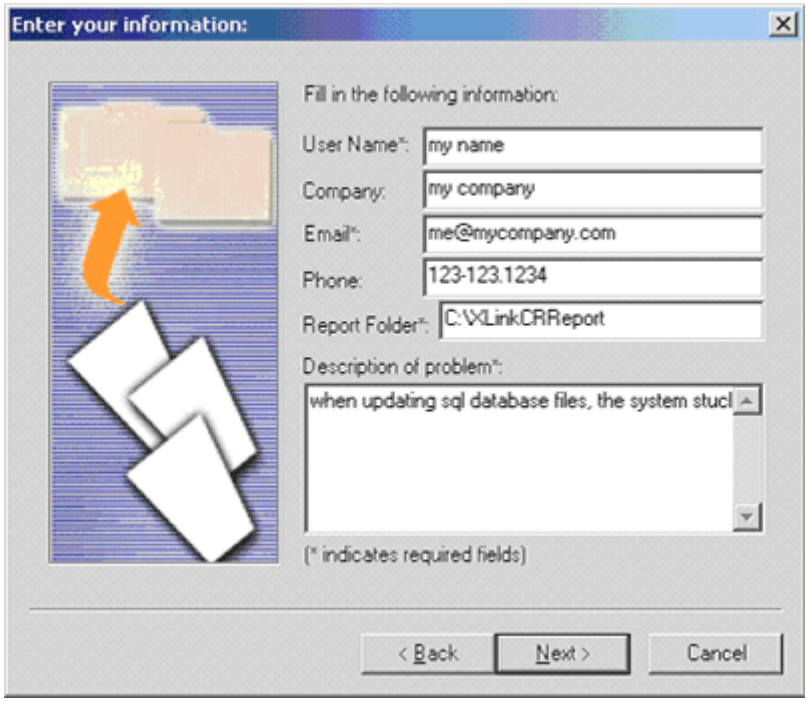
How to get help

Due to complex system configurations of ClusterReplica software, XLink specially designed an "Error Report" log. Users must follow listed steps to generate this report log.

1. From ClusterReplica user interface, click **Help** on the menu bar, then select **Generate Report for Support**
2. Following dialog box will appear



3. Fill in the information with description of your problem, then click "Next". Next screen confirms the input. If you wish to make changes, click "Back" to go back to previous page.



4. If all looks right, click "finish" to complete the process.

Now you have generated the error log. Go to C:\XLinkCRReport to find the file "Reportsetup.txt". Email this file to support@xlink.com and we will contact you for possible solutions.

If you have further questions regarding this product, please feel free to contact us.

Phone: 408-263-8201
fax: 408-263-8203
email: support@xlink.com

NOTE: Please always include the product name in the subject line when you send email for support. Thanks you.

Related links:

- Get the Printable user's manual
- Learn more about ClusterReplica Enterprise