How to Perform a Two-Phase Commit Transaction over TCP/IP

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In this article

Two-phase commit (2PC) is a host server-installed protocol that ensures that updates to multiple instances of a database on a network either succeed or fail in their entirety. Host Integration Server supports 2PC over TCP/IP, enabling you to gain the security of a 2PC connection over the Internet.

Host Integration Server supports 2PC works using two components: the Microsoft Distributed Transaction Coordinator (DTC), and the transaction log. The DTC governs the normal DTC transaction flow: enlist, prepare, commit, and abort. Also, DTC handles transaction recovery in case of any failure or disconnection, while the transaction log maintains a log of information that is needed in case of recovery.

You can perform a 2PC transaction with ADO.NET and the Managed Provider for DB2 by using the `System.Transactions` namespace. Using a 2PC transaction is automatic, when you configure the connection property Units of Work=DUW.

Example

The following code example demonstrates how to use 2PC in a DB2 transaction.

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```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Data;
using System.Transactions;
using Microsoft.HostIntegration.MsDb2Client;

namespace Db2DistributedTransaction
{
    class Program
    {
        static void Main(string[] args)
        {
            Db2Tx();
        }

        static void Db2Tx()
        {
            string connectionStringDb2 = "Password=HISDEMO;User ID=HISDEMO;Initial Catalog=DSN1D037;Data
Source=DSN8910;Network Transport Library=TCPIP;Host CCSID=37;PC Code Page=1208;Network
Address=123.34.45.57;Network Port=446;Package Collection=HISDEMO;Default Schema=DSN8910;Default
Qualifier=DSN8910;Units of Work=DUW;Defer Prepare=True;AutoCommit=False";
            System.Transactions.CommittableTransaction transaction = new
System.Transactions.CommittableTransaction();
            MsDb2Connection connection = new MsDb2Connection(connectionStringDb2);
            MsDb2Command command = new MsDb2Command();
            try
            {
                connection.Open();
                connection.EnlistTransaction(transaction);
                command.Connection = connection;
                command.CommandText = "INSERT INTO DSN8910.AREAS (AREAID, AREADESC, REGIONID) VALUES ('11111',
'Area 11111', 111)";
                command.ExecuteNonQuery();
                command.CommandText = "INSERT INTO DSN8910.AREAS (AREAID, AREADESC, REGIONID) VALUES ('22222',
'Area 22222', 222)";
                command.ExecuteNonQuery();
                while (true)
                {
                    Console.Write("Commit or Rollback? [C|R] ");
                    ConsoleKeyInfo c = Console.ReadKey();
                    Console.WriteLine();
                    Console.ReadKey();
```

```
                if ((c.KeyChar == 'C') || (c.KeyChar == 'c'))
                {
                    transaction.Commit();
                    break;
                }
                else if ((c.KeyChar == 'R') || (c.KeyChar == 'r'))
                {
                    transaction.Rollback();
                    break;
                }
            }
            connection.Close();
            transaction = null;
        }
        catch (Exception ex)
        {
            Console.WriteLine("Commit Exception Type: {0}", ex.GetType());
            Console.WriteLine("  Message: {0}", ex.Message);
            Console.ReadKey();
        }
        Console.WriteLine("Program end.");
        Console.ReadKey();
    }
}
```

See Also

[Working with the Managed Provider for DB2]