DHCP Web Services

Installation Documentation

Contents

Overview

DHCP Web Services (DWS) contains two sets of ASP.NET 2.0 web services, DhcpOperations.asmx and DhcpSecurity.asmx. Both sets of web services implement SOAP messages based on the WS-I standard, Basic Profile 1.1. DhcpOperations provides a set of operations to manage a Microsoft DHCP server. While DhcpSecurity provides operations to manage the authorization layer within the DhcpOperations web services. DWS employs a [trusted subsystem](#) application model. The connecting client account to a web service must be authenticated (via IIS) and authorized (via DWS itself) to perform a DHCP operation. Once a client is authorized, a service account with access to the DHCP server will perform the operation on the client's behalf.

Terms

Term	Description
webserver	Hostname of IIS web server hosting DWS application
dhcpserver	Hostname of existing Windows 2003 DHCP server
serviceaccount	Local or Domain user account used as identity for the DWS application pool(*webserver*) and also authorized as a DHCP Administrator (*dhcpserver*) Examples: `domain\user, localhost\user`
domain	Active Directory Domain
localhost	In a non-domain install scenario, this is the server that hosts the DHCP _and_ the

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	DWS application
dwsroot	Location of DHCP Web Services application
	Examples: `C:\dws`, `C:\inetpub\wwwroot\dws`

Systems Architecture

Web Server on DHCP Server (Single Server Deployment)

The IIS web server and DHCP server are located on the same machine. This scenario has its advantage when the machine is not deployed in an Active Directory domain. Local accounts can be used as *serviceaccount* and end user client authorizations.

RPC

HTTP/SOAP

DHCP/WEB Server
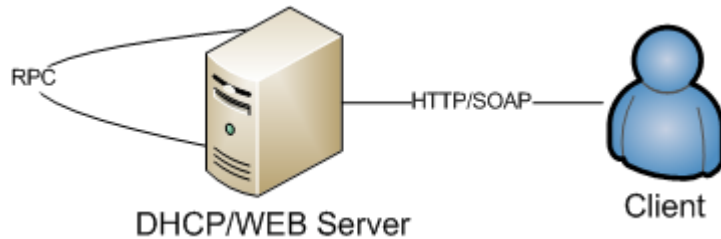
Client

Separate Web and DHCP Server

The IIS web server is deployed on a separate machine than the existing DHCP server. Domain accounts must be used as the *serviceaccount* and end user client authorizations in this scenario.

RPC

HTTP/SOAP

DHCP Server

WEB Server

Client
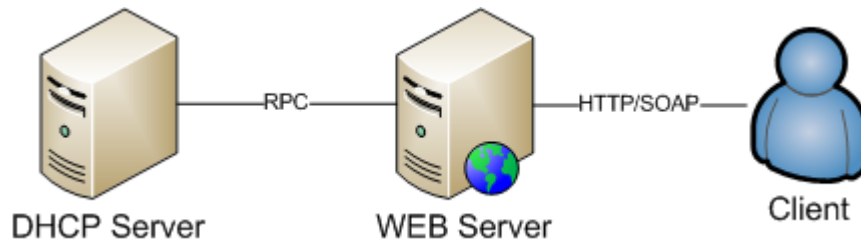
Requirements

- Windows Server 2003 SP1 or greater
- Microsoft .NET 2.0
- IIS 6.0 with ASP.NET 2.0 enabled

Installation

Installation begins by verifying ASP.NET 2.0 is installed properly on *webserver*, then setting up *serviceaccount* rights and creating an application pool for DWS. Finally, choose a location to copy DWS application, *dwsroot*, and configure IIS settings for DWS. DWS will use basic authentication over SSL for user authentication and Authorization Manager (AzMan) for DHCP authorizations. Finally, an authorization will be set for the DWS global administrator role, this account can begin to use DWS and/or start assigning additional authorizations so other users can consume DWS.

Verify ASP.NET 2.0

On *webserver*
1. Open IIS MMC, select 'Web Service Extensions'
2. If 'ASP.NET v2.0.x' missing or not in allowed state, perform step 3
3. Register ASP.NET in IIS. At command prompt:

```
%systemroot%\Microsoft.NET\Framework\v2.0.x\aspnet_regiis -i
```

Setup Service Account

On *webserver*
1. Register *serviceaccount* for the ability to run a ASP.NET 2.0 application properly:

```
%systemroot%\Microsoft.NET\Framework\v2.0.x\aspnet_regiis –ga domain\serviceaccount
```

2. Add modify ACL to `%systemroot%\temp` directory for local computer group **IIS_WPG**

On *dhcpserver*
3. Add *serviceaccount* to local computer group **DHCP Administrators**

Create Application Pool

On *webserver*
1. Open IIS MMC, right client 'Application Pools' → New → Application Pool…
   a. Name: DWSAppPool, OK
2. Assign *serviceaccount* to app pool identity: Right client new pool → properties → Identity Tab
   a. Select 'Configurable'
   b. User: *domain\serviceaccount*

Install and Configure DWS

On *webserver*
1. Copy dws directory from DWS media to *dwsroot*
   a. If *dwsroot* is located in website's root directory (usually C:\Inetpub\wwwroot), skip to step X. Otherwise, create a IIS virtual directory to DWS location outlined in next steps
2. Create Virtual Directory (IIS MMC)
   a. Right click website → New → Virtual Directory…
      i. Alias: dws
      ii. Path: *dwsroot*
      iii. Access Permissions: skip
   b. Configure IIS setting for DWS directory, right client DWS folder in website tree → properties
      i. Virtual Directory Tab (Application Settings)
         1. Select 'Create' button
         2. Execute Permissions: Scripts and Executables

3. Application Pool: DWSAppPool
        ii. ASP.NET Tab
            1. Version 2.0.x
       iii. Directory Security Tab
            1. Configure SSL Certificate
            2. Authentication and Access
                a. Disable Anonymous
                b. Enable Basic Auth
   3. Configure Authorization Store Path
        a. Edit web.config in DWS directory
        b. Change AZ_STORE_PATH value to FULL path of *dwsroot*\App_Data\DWSAzRoles.xml
   4. [Optional] Constrained DWS access
        a. Access to DWS can be constrained beyond the built-in application authorization model by editing the web.config and changing the <authorization> tags. This can limit accounts from accessing DWS altogether.
   5. Assign/Authorize DWS application global administrator
        a. DWS will automatically assign global administrator role to 'builtin\administrators' group of the *webserver*. To assign another account this access so they can begin to use DWS, follow:
            i. On *webserver*, start→run→ azman.msc
           ii. Right click Authorization Manager → Open Authorization Store
          iii. Browser to *dwsroot*\App_Data\DWSAzRoles.xml, open
           iv. DWSAzRoles.xml → DWS → Role Assignment → GlobalAdministrator, Right click add new account. This account can be user or group in *domain* or *localhost*
            v. Recycle DWSAppPool in IIS MMC after change
   6. Verify DWS
        a. https://localhost/dwsdir/DhcpSecurity.asmx

Multiple DHCP Servers

DWS can support the management of multiple DHCP servers by adding *serviceaccount* to another DHCP server's local computer group 'DHCP Administrators'. The same action completed in step 3 of section 'Setup Service Account'.

Consume

User accounts that either belong to the GlobalAdministrators application group or builtin\administrators group of *webserver* can begin to use DWS clients to consume the web services. See DWS Management Console client (MMC 3.0) documentation and Perl client samples on DWS media.