Disabling the Link Local Multicast Name Resolution (LLMNR) protocol when it is causing slowdowns for connections between newer workstations and older Windows XP / Windows 2003 servers

The following document is a technical discussion involving advanced topics about Windows networking. If you do not understand how to implement this possible solution, involve an experienced network technician to assist.

Summary:

If you are using newer workstations running Windows Vista, Windows 7, etc., to act as SchoolLeader workstations, but you are still using an older Windows XP based computer (e.g. Windows XP, Windows 2003, or Small Business Server 2003) to host the SchoolLeader DBMS, you may experience slow response times when communicating with the server from these workstations. The problem is more prevalent when these newer workstations are 64bit computers, and the server is 32bit.

There can be many causes for this. However, a commonly reported cause is due to a compatibility issue regarding the the LLMNR protocol. If this is the cause, the problem can be easily resolved by temporarily turning off this LLMNR protocol on your newer Windows 7+ computers until you can upgrade the server.

What is LLMNR?

The **Link Local Multicast Name Resolution** (**LLMNR**) is a protocol based on the Domain Name System (DNS) protocol that allows computers to perform name resolution for addresses on the same local network without the need for a centrally coordinating DNS server.

The **Domain Name Service** (DNS) protocol (as well as LLMNR) translate queries for domain names into IP addresses. Both of these protocols are what allow your workstations to locate each other as well as locate computers over the internet. Consider LLMNR like an extra layer on top of DNS to help supplement and/or replace the DNS process for LOCAL name resolution.

The problem arises because all older computers running LLMNR listen on the IPv4 multicast address 224.0.0.252 and instruct their Ethernet network adapters to listen for Ethernet frames with a destination multicast address. Windows 7-based computers using LLMNR to perform name resolution do not send or respond to multicast queries. As a result, these workstations wait for a response to their name resolution query that never arrives. After a timeout period, the computer will use other means to eventually obtain the name resolution needed.   The end result (and noticed symptom) is that communication with the server works, but is substantially slower than expected when trying to access resources on these older XP based computers.

The solution is to simply disable LLMNR on the newer computers until such time that you can replace your older XP based server and remove the mixture of XP computers with newer Vista, Win7, Win2008, etc.

Disabling LLMNR on computers with "Professional" or "Server" type Operating Systems:

NOTE: These instructions are only for computers running Professional or Server versions of Windows. If you are using a "Home" edition please see the next section below for instructions.

1) Go to Search off the START Menu and type GPEdit.msc in the textbox. Then press <enter>
2) A window similar to the one shown below should display.
3) Navigate to the displayed location using the explorer tree on the left. The drill down path is:
    o Local Computer Policy
        ▪ Computer Configuration
            • Administrative Templates
                o Network
                    ▪ DNS Client
4) Once you get to the DNS Client folder, double click on the Turn Off Multicast Name Resolution setting and make sure the State is set to "Enabled".
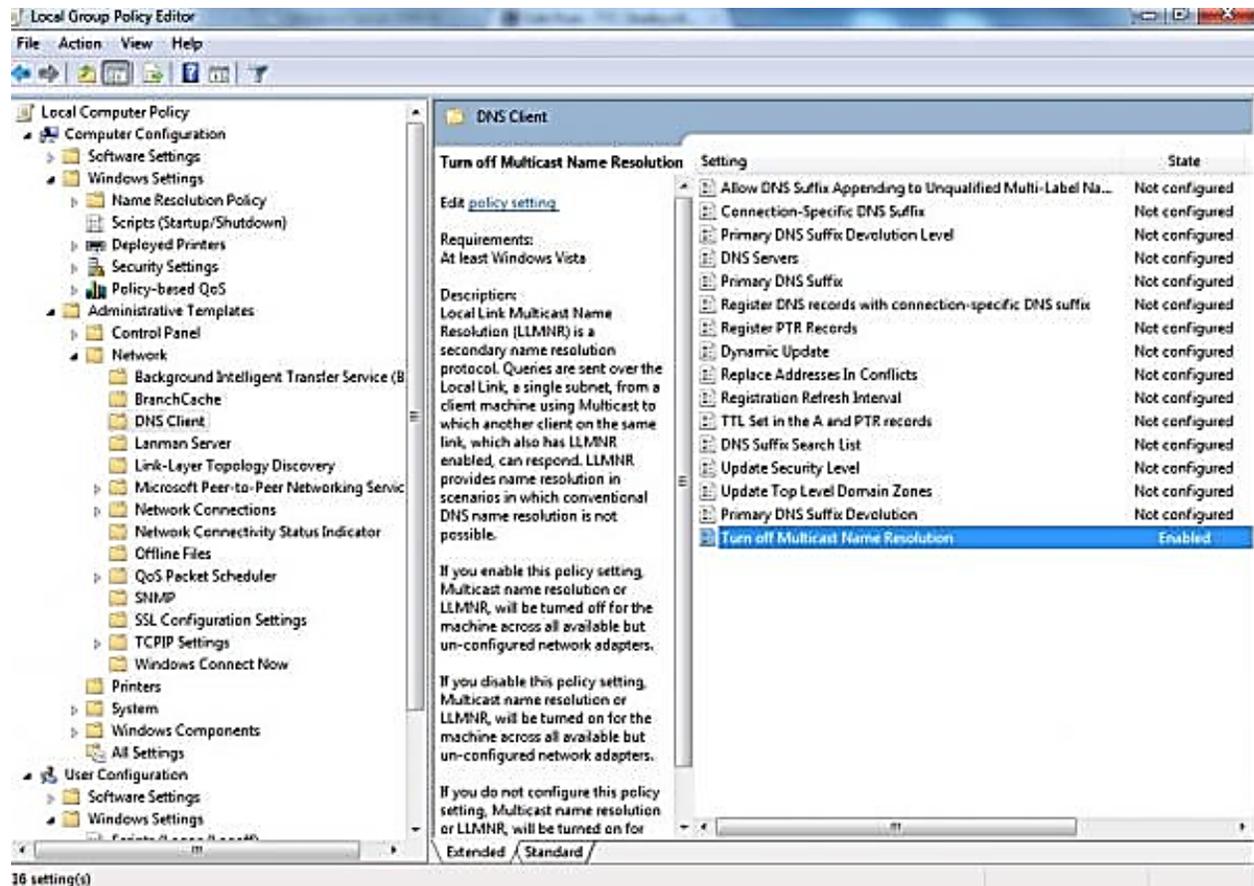
Disabling LLMNR on computers with "Home" type Operating Systems:

Home edition versions of Windows do not have the more convenient Policy Editor tools to allow making changes to underlying windows settings as shown in the section above. These changes can still be made, however you will need to do it manually by changing the registry settings that corespond to these settings.