

Configuration Example for QoS on Windows Based Fax Servers

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Introduction

This document describes the method to configure quality of service (QoS) on Microsoft Windows based Fax Servers. This practice allow for the correct Differentiated Services Code Point (DSCP) values in order to applied on packets sent by the server into the network.

Prerequisites

Cisco Unified Communications solutions for fax and a third party Fax Server on Microsoft Windows Server versions 2007 and above.

Requirements

Cisco recommends that you have knowledge of these topics:

- Layer 3 QoS
- Fax over Internet Protocol (FOIP)
- Capture and view network traffic in Wlreshark

Components Used

The information in this document is based on these software and hardware versions:

- 2951 router with IOS 154-3.M4
- Windows Server 2007
- Xmedius Fax Server 6.5

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Problem

By default Microsoft Windows servers mark packets with a differentiated services code point (DSCP) value of zero. This can cause QoS problems with media packet delivery over high latency network segments.

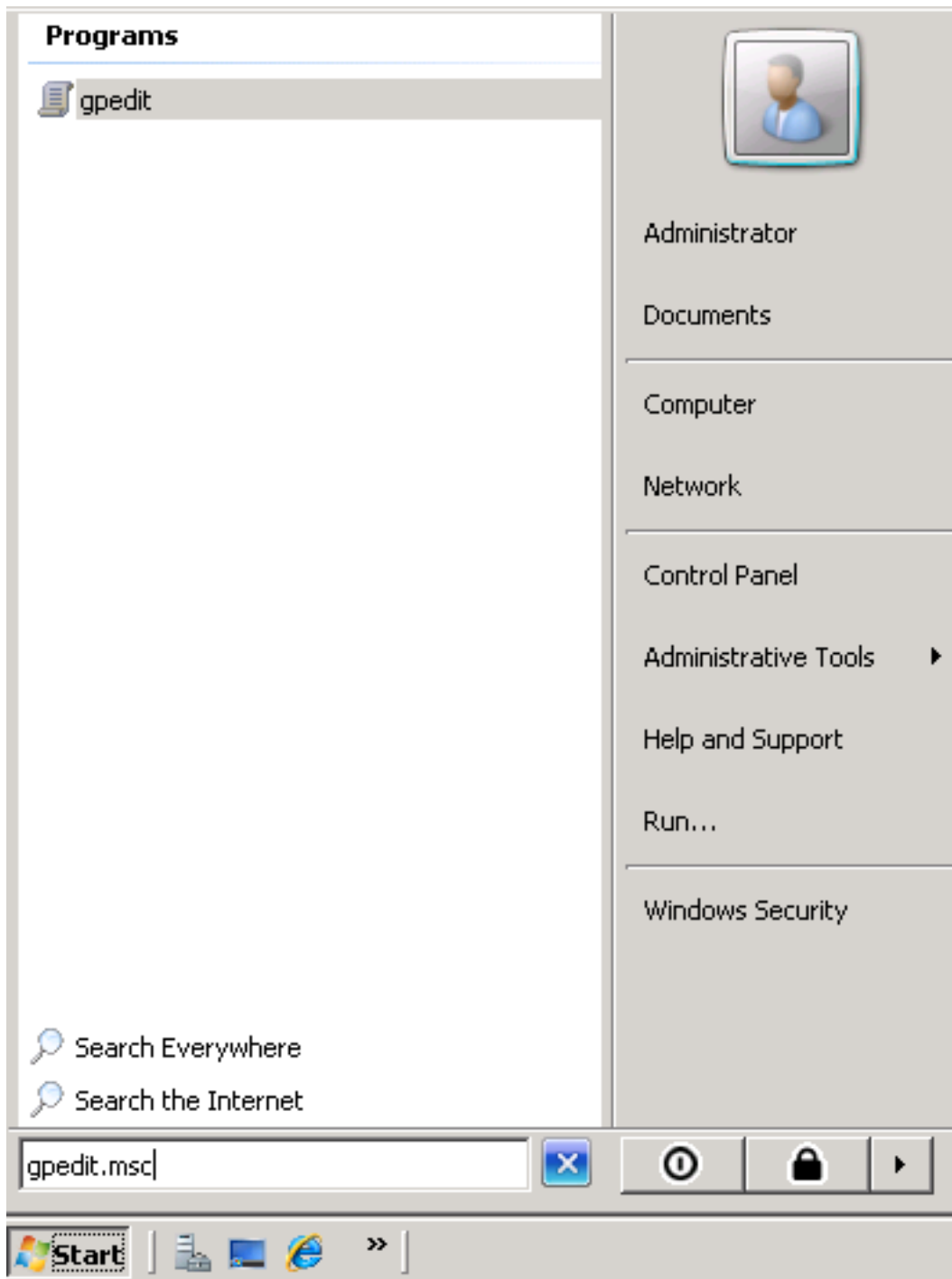
Solution

This problem can be resolved by configuring the Windows Server group policy to apply a DSCP value of 46 (expedited Forwarding) based on the RTP port range.

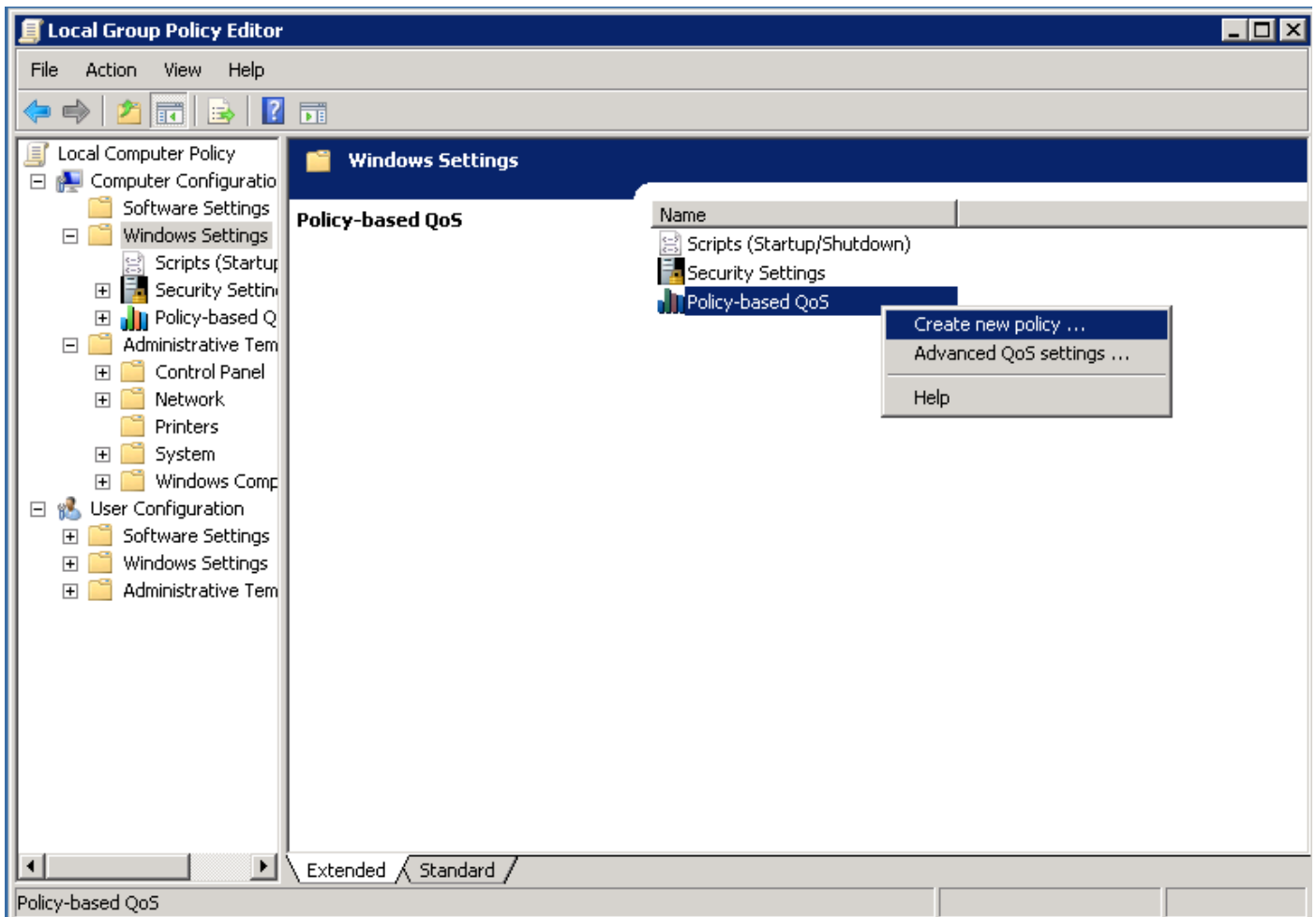
Configure

To configure the Windows Server in order to apply desired DSCP values follow these steps.

Step 1. Access the MS Windows group policy edit configuration page by entering the command **gpedit.msc** into the run section of the Windows start menu.



Step 2. Expand the **Windows Setting** section of the **Local Computer Policy** and right click the **Policy-based QoS** selection.



Step 3. In the Policy-based QoS configuration pop-up provide the desired **Policy name**. Then choose the desired value in the **Specify DSCP Value**. This is the value with which you would like to mark the packets sent from the server. Once this values has been defined select the **Next** button.

Policy-based QoS [X]

Create a QoS policy
A QoS policy applies a Differentiated Services Code Point (DSCP) value, throttle rate, or both to outbound TCP or UDP traffic.

Policy name:

Specify DSCP Value:

Specify Throttle Rate:

[Learn more about QoS Policies](#)

Step 4. One way to choose which packets are marked is select which program use the QoS policy. Select the radio button in order to allow the policy been applied to **All Applications**. Once this values has been defined select the **Next** button.

Policy-based QoS



This QoS policy applies to:

All applications

Only applications with this executable name:

Example: application.exe or %ProgramFiles%\application.exe

[Learn more about QoS Policies](#)

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Next >

Cancel

Step 5. IP address ranges can also be used to define which packets are marked with the QoS policy. Select the radio buttons for any source IP address and also any destination IP address. Once this entries has been defined select the **Next** button.

Policy-based QoS ✕

Specify the source and destination IP addresses.
A QoS policy can be applied to outbound traffic that is from a source or to a destination IP (IPv4 or IPv6) address or prefix.

This QoS policy applies to:

Any source IP address

Only for the following source IP address or prefix:

Example for a host address: 192.168.1.1 or 3ffe:ffff::1
Example for an address prefix: 192.168.1.0/24 or 3ffe:ffff::/64

This QoS policy applies to:

Any destination IP address

Only for the following destination IP address or prefix:

[Learn more about QoS Policies](#)

Step 6. To allow for the media packets sent by the server marked with the DSCP value of 46 select the option for User Datagram Protocol (UDP) in the Select the protocol this QoS policy applies to drop down menu. Select the radio button for the **From this source port number or range** section and apply the Real-time Transport Protocol (RTP) port range **16384:32767** values. Select the radio button for the To this destination port number of range and apply the RTP port range **16384:32767** values. Once this setting has been defined select the **Next** button.

Policy-based QoS X

Specify the protocol and port numbers.
 A QoS policy can be applied to outbound traffic using a specific protocol, a source port number or range, or a destination port number or range.

Select the protocol this QoS policy applies to:

UDP

Specify the source port number:

From any source port

From this source port number or range:

Example for a port: 443
 Example for a port range: 137:139

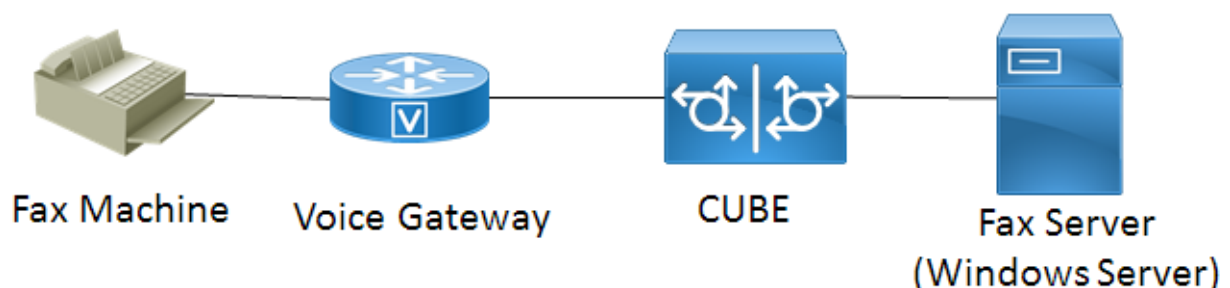
Specify the destination port number:

To any destination port

To this destination port number or range:

[Learn more about QoS Policies](#)

Network Diagram



Verify

Use this section to confirm that your configuration works properly. Install Wireshark on the Windows Server where the QoS policy configuration was applied. Once it is installed start a packet capture and send a test fax. After the test fax has completed save the packet capture.

Find the media stream for the test fax and highlight an Real-time Transport Protocol (RTP) or UDP-TL packet sent by the server. Double click the **Internet Protocol Version 4** expansion menu in the lower half of the Wireshark window. Afterward verify that **Differentiated Services Field: 0xb8 (DSCP 0x2e: Expedited Forwarding)** is visible for the desired packet stream.

Troubleshoot

There is currently no specific troubleshoot information available for this configuration.

Related Information

- [Microsoft Technet Configuration Guide](#)
- [Technical Support & Documentation - Cisco Systems](#)