Instance Configuration Settings

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What This Module Covers

Operating system issues

Operating system configuration settings related to SQL Server

Instance-level configuration settings for scalability

Best practices for performance and scalability

Operating System Issues

Not using Windows Server 2012 or newer is a big mistake!

Newer server OS versions are much better for SQL Server performance

Newer versions will have Microsoft support for a longer period of time

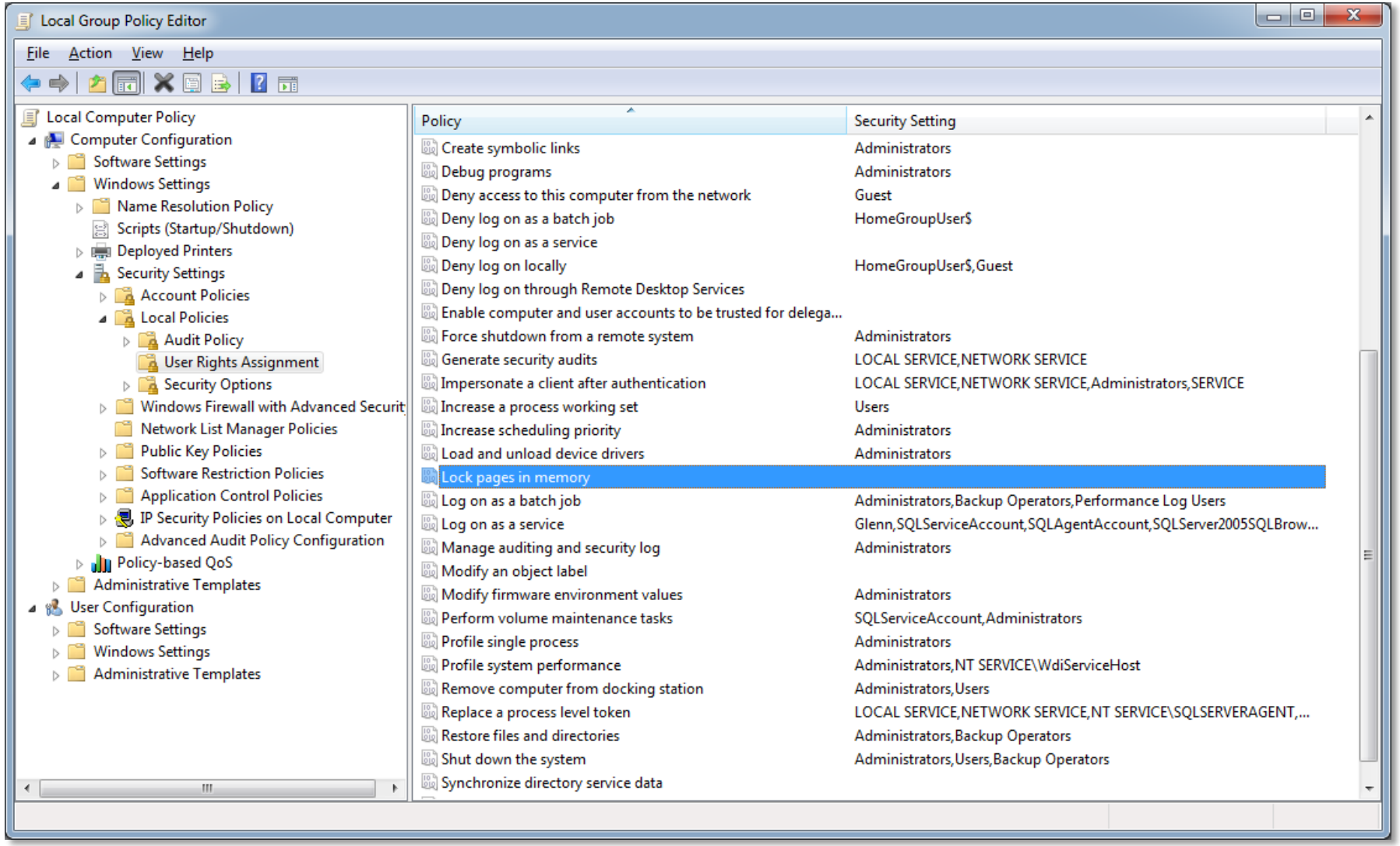
Better clustering support, higher license limits, less expensive licensing costs using Windows Server 2012 Standard Edition or newer

Server Message Block (SMB) 3.0 or newer give much better network performance

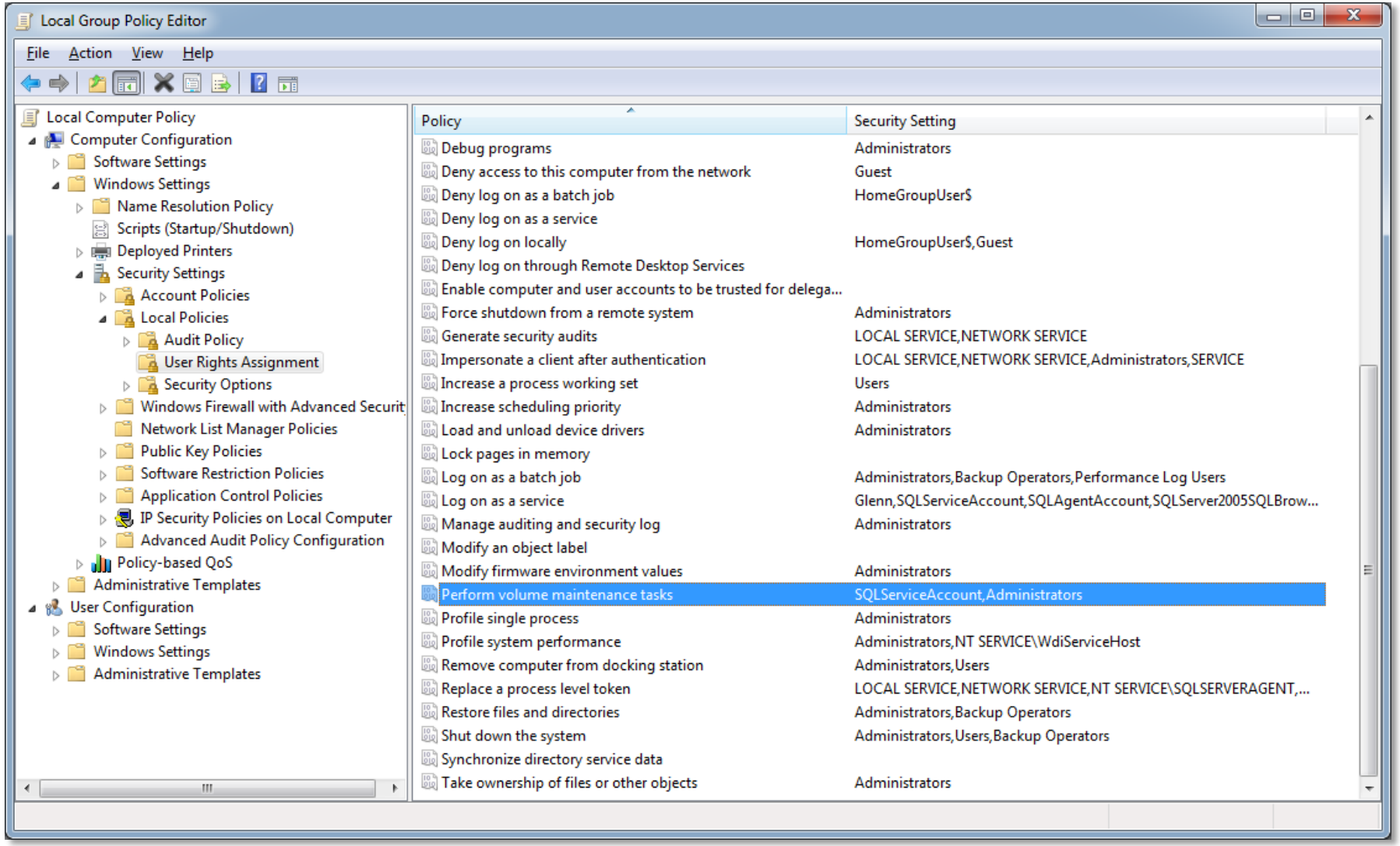
Negotiated Versions of SMB

OS	WS 2016	WS 2012 R2	WS 2012	WS 2008 R2	WS 2008
WS 2016	SMB 3.1.1	SMB 3.0.2	SMB 3.0	SMB 2.1	SMB 2.0.2
WS 2012 R2	SMB 3.02	SMB 3.0.2	SMB 3.0	SMB 2.1	SMB 2.0.2
WS 2012	SMB 3.0	SMB 3.0	SMB 3.0	SMB 2.1	SMB 2.0.2
WS 2008 R2	SMB 2.1	SMB 2.1	SMB 2.1	SMB 2.1	SMB 2.02
WS 2008	SMB 2.0.2	SMB 2.0.2	SMB 2.0.2	SMB 2.0.2	SMB 2.0.2

Lock Pages in Memory (LPIM)



Perform Volume Maintenance Tasks



Windows Page File Size

Set to fixed, small size (e.g., 4096MB) as no need to have it be 1.5 times OS RAM size

If database server is paging, there is severe external memory pressure

LPIM prevents paging of SQL Server buffer pool (by design)

Global Trace Flags

TF 3226

TF 2371

TF 1118

TF 3023

Tempdb Configuration Settings

Start with four to eight tempdb data files, all same size

Enable fixed auto grow size in MB, same size for every file

Use a fast, dedicated LUN and consider flash-based storage if workload requires it

Instance-level Configuration Settings

- Backup checksum default
- Backup compression default
- Cost threshold for parallelism
- Max degree of parallelism
- Max server memory (MB)
- Optimize for ad hoc workloads

Best Practices for Performance and Scalability

Use Windows Server 2012 or newer

Make sure to configure OS properly for performance

Grant appropriate rights to SQL Server Service account

Use appropriate global trace flags

Make appropriate instance-level configuration changes

Configure tempdb properly

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