Tuning ESN 1.0 for Performance

MICRO FOCUS®

Achieving optimal performance by your ESN deployment requires that you do the following:

- Assess system needs and plan to meet those needs as outlined in the ESN 1.0 Planning Your ESN Deployment—Best Practices guide.
- Deploy ESN according to your plan by following the basic order outlined in "Creating an Expandable ESN Deployment" in the *ESN 1.0: Installation, Deployment, and Upgrade Guide*.
- Adjust and tune system settings and resources on an ongoing basis as workload details become clearer and ESN usage increases.

Ultimately, each ESN deployment is unique. Therefore, we can only offer the general guidelines in the sections that follow.

Ensure That Hardware Recommendations Are Met or Exceeded

As a general rule, you should ensure that your virtual machine host hardware, disk subsystems, network hardware, and so on, are at least on par with the resources of your file servers. Otherwise, your ESN deployment could hinder rather than enhancing file access.

As a minimum, ensure that your ESN deployment meets the requirements outlined in *ESN 1.0 Planning Your ESN Deployment—Best Practices*.

Ensure Optimal Network and Disk Bandwidth for /vashare

Ensure that the network connection with the NFS or CIFS server that your ESN appliances target is high-speed and that the disk subsystems on that server are highly performant.

Use Hardware-based SSL Termination

Terminate SSL on a hardware device that is connected to your ESN appliances through a secure link that is reviewed and approved by your organization's security team.

Deploy At Least Two ESN Appliances

Every large, expandable (clustered) ESN deployment should have at least two ESN appliances for failover and splitting the workload.

Dedicate a ESN Appliance to Synchronization

In deployments that require more than two ESN appliances, place at least one of them, beginning with the third, in the back-end network and dedicate it to synchronization.

Configure the appliance as follows:

1. Don't provide user access through your load balancing hardware or software

2. Ensure that it is the only ESN appliance with the Allow Synchronization option enabled.

   For details, see "Using the Net Folders (synchronization) dialog" in the *ESN 1.0: Administrative UI Reference*.

This dedicates the ESN appliance to handling full Net Folder synchronizations and minimizes the effect that synchronizations have on user activities.

Understand Your User Activity Workload

Estimating the file-activity workload for your ESN deployment, requires that you understand how your users work, what kinds of tasks they perform, how often they do them, which clients they use, and so on.

- "Tasks and System Load" on page 2
- "Task Frequency" on page 2
- "Client Access Method" on page 2

TASKS AND SYSTEM LOAD

Typical ESN user tasks can include the following:

- Uploading files
- Downloading files
- Viewing files
- Sharing files
- Commenting on files
- Searching file content

Determining the system load for these tasks is not as straight-forward as might be assumed. For example, in some situations, commenting on a file could cause a greater load than downloading a small file.

You need to clearly understand the tasks your users perform in order to properly monitor your system and understand which adjustments will provide the most benefit.

TASK FREQUENCY

That task frequency is also important is quite obvious. Will your users be logged in to ESN and constantly performing various tasks, or will they only occasionally access ESN? Or do they fall somewhere between the two extremes?

It is a good practice to assess how frequently users will access ESN.

CLIENT ACCESS METHOD

The desktop clients are more resource-intensive than the web application or mobile clients.

- **Desktop Clients:** Background synchronization continues regardless of whether the user is actively using the client. An inactive desktop user puts more load on ESN than an active mobile client or web user.
- **Mobile Clients:** Although requests from mobile clients are similar to desktop requests because of REST, they are single requests and don't involve any background synchronization.
- **ESN Web Application:** These requests are simple HTTPS requests to ESN.

Understand How Data and Synchronization Affect Performance

ESN synchronizes data between the file system and ESN, and between ESN and the ESN desktop application. The following sections describe various factors related to synchronization and how these factors can affect performance.

- "Data Location (Net Folders vs. Personal Storage)" on page 2
- "Home Folder Synchronization" on page 2
- "Net Folder Synchronization" on page 2
- "Desktop Synchronization" on page 3

DATA LOCATION (NET FOLDERS VS. PERSONAL STORAGE)

Users who access data on Net Folders consume more resources than users who access data on Personal Storage.

HOME FOLDER SYNCHRONIZATION

You can now configure ESN so that a desktop client can trigger home folder synchronization.

NET FOLDER SYNCHRONIZATION

Consider the following when planning Net Folder synchronization:

- "Content Indexing for Net Folders (Full vs. Just-in-Time Synchronization)" on page 3
- "Schedule" on page 3
- "Load" on page 3

Content Indexing for Net Folders (Full vs. Just-in-Time Synchronization)

Whether or not you want data to be immediately searchable might influence the type of synchronization method that you implement for the Net Folder because data cannot be indexed (and therefore is not returned in searches) until after the data is synchronized.

In a full synchronization, the synchronization process begins when you configure the Net Folder. In a Just-in-Time synchronization, the synchronization process begins after a user accesses a folder for the first time.

For more information about the considerations to make when deciding between Full synchronization and Just-in-Time synchronization, see "Net Folder Synchronization Types" in *ESN 1.0 Planning Your ESN Deployment—Best Practices*.

Schedule

The frequency which Net Folders are synchronized can affect performance. For more information, see "Avoid Over-Synchronization" in *ESN 1.0 Planning Your ESN Deployment—Best Practices*.

Load

The amount of data that is synchronized can affect performance. For more information, see "Planning the Amount of Data to Synchronize" in *ESN 1.0 Planning Your ESN Deployment—Best Practices*.

DESKTOP SYNCHRONIZATION

IMPORTANT: For optimal performance, users should not configure the ESN desktop application to synchronize more than 35,000 total files, or to synchronize individual files that are larger than 5 GB to their workstations.

By default, the ESN desktop application polls the ESN server for changes every 15 minutes (synchronization interval). Changes made to a document from the desktop are immediately synchronized to the server after the document is saved and closed.

Changing the synchronization interval from the 15-minute default to a shorter interval can increase load on the ESN system and can therefore adversely affect system performance; however, if the nature of user interaction demands that the interval be set to synchronize more frequently (such as every 5 minutes), it can make sense to change this and increase system resources to accommodate the increased load.

For more information about configuring the ESN desktop application, see "Desktop Access—Default Settings" in the *ESN 1.0: Administrative UI Reference*.

Bring Net Folder and Home Directory Users Online in Phases

If your users will synchronize Net Folders to their desktops, bring them online in phases to control the amount of bandwidth consumed by downloading.

Rely on Ganglia for Help with Optimizing RAM and CPU Allocation

Access Ganglia regularly to monitor usage and system load. As RAM and CPU usage and load rise, allocate more resources to the ESN VMs.

Deploy additional ESN appliances as needed.