



FAST INSTREAM

version 4.1

INSTALLATION GUIDE

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FAST Support

Website

Please visit us at:

<http://www.fastsearch.com/>

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Technical Support and Licensing Procedures

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E-mail: tech-support@fastsearch.com

For obtaining FAST licenses or software, contact your FAST Account Manager or

E-mail: customerservice@fastsearch.com

For evaluations, contact your FAST Sales Representative or FAST Sales Engineer.

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About this Guide

Purpose of this Guide

This guide describes how to install FAST InStream 4.1 on a UNIX or Windows platform. This guide assumes the reader, depending on the platform to be supported, has some experience with basic system administration.

FAST InStream is a derivative of FAST Data Search for OEM deployments.

It is recommended that you read through the installation chapters carefully before actually starting the installation process.

Note! For information about other guides included in the FAST InStream documentation set refer to *Chapter 1 The FAST InStream Documentation Set* in the *FAST Data Search Product Overview Guide*.

The FAST InStream Online Help package is installed separately. The Online Help installer can be found in the *Documentation* folder of the FAST InStream distribution. This will enable reference to HTML versions of the FAST InStream guides from the Administration GUI (help button).

Audience

This guide provides information for several types of users:

- Managers and supervisors, who need to understand how FAST InStream functions in order to plan the system design, configuration, implementation, and operation.
- Installers, who need installation information about FAST InStream.

Conventions

This guide uses the following textual conventions:

- Terminal output, contents of plaintext ASCII files will be represented using the following format:

Answer yes to place the node in the known_hosts file.

- Terminal input from operators will be in the same but bold format:

chmod 755 \$HOME

- Input of some logic meaning, will be enclosed in <> brackets:

setup_<OS>.tar.gz

where <OS> represents a specific operating system that must be entered.

- URLs, directory paths, commands and the names of files, tags, and fields in paragraphs appear in the following format:

The default home directory is the *C:\DataSearch* directory.

- User Interface page/window texts, buttons, and lists appear in the following format:

Click **Next** and the **License Agreement** screen is displayed.

- *\$FASTSEARCH* (UNIX) or *%FASTSEARCH%* (Windows) refer to an environment variable set to the directory where FAST InStream is installed.

Chapter 1

Installation Requirements and Concepts

This chapter lists requirements that need to be fulfilled before FAST InStream is installed.

This chapter includes:

- Operating Systems
- System Requirements
- Web Browsers
- Minimum Hardware Requirements
- Installation Types
- Installation Concepts

Operating Systems

Read the release notes and readme.txt for latest updates on patches and kernel versions.

FAST InStream 4.1 runs on:

UNIX

- Red Hat Enterprise Linux 2.1 on Intel x86
Upgrade kernel to 2.4.9-e.35enterprise and glibc to glibc-2.2.4-32.11
- Red Hat Enterprise Linux 3.0 on Intel x 86
Upgrade kernel to 2.4.21-9.EL, glibc to glibc-2.3.2-95.6 and compat-libstdc++ library to compat-libstdc++-7.3-2.96.122
- Sun Solaris 8, Release: 5.8 on sparc
Kernel architecture: sun4u and kernel version: SunOS 5.8 Generic 108528-26 Oct 2003
- Sun Solaris 9, Release: 5.9 on sparc
Kernel architecture: sun4u and kernel version: SunOS 5.9 Generic 112233-05 February 2003
- IBM AIX 5.1, Version: 5.1.0.0 and maintenance Level: 4 (5100-04)
Kernel: 32 bits, Library xlc.rte must be version 6 or later
- IBM AIX 5.2, Version: 5.2.0.0 and maintenance Level: 1 (5200-01)
Kernel: 32 bits
- IBM AIX 5.3, Version 5.3.0.0 on PowerPC
Kernel: 32 bits
- HP-UX 11.0, Version: 11.0, Patch level: PHCO_29959 on PA/Risc
Update kernel parameters:
 - maxusers: 256 or higher
 - max_thread_proc: 256 or higher
 - maxfiles: 1024 or higher
- HP-UX 11.i, Version: 11.11, Patch level: PHCO_29960 on PA/Risc
Update kernel parameters:
 - maxusers: 256 or higher
 - max_thread_proc: 256 or higher

- maxfiles: 1024 or higher
- HP-UX 11i v2, Version: 11.23 on IA64
- SuSE Enterprise Linux 8 on Intel x 86
Upgrade kernel to 2.4.19-64GB-SMP, compat-lib to compat-2004.4.2-3 or later.
X-free libraries must be installed. (RPMs installed: xf86-4.2.0-188.i586.rpm,
xf86tools-0.1-419.i586.rpm)
- SuSE Enterprise Linux 9 on Intel x 86
Kernel 2.6.5-7.97.bigsmp
RPMs installed: xf86tools-0.1-955.5, XFree86-4.3.99.902-43.22, XFree86-libs-
4.3.99.902-43.22

Windows

- Microsoft Windows Server 2000
Version: 5.00.2195, Service Pack: 4
- Microsoft Windows Server 2000
Version: 5.2.3790, Service Pack: 0.0, Hot Fixes: KB828750

System Requirements

Before installing FAST InStream, the following requirements must be met:

All Platforms

- Assign static IP addresses to all hosts where FAST InStream will be installed. Do not use DHCP when assigning addresses to these hosts.
- A successful installation can only take place on a host that has a fully qualified domain name. This excludes installation of hosts without domains and IP addresses. The fully qualified hostname should be the *primary* hostname of the host; it should not be listed as an alias.
- Check that each hostname to be crawled is reachable from the crawler node and DNS resolves correctly.
- Verify that the command *hostname* returns a fully qualified host name and domain. Make a lookup and reverse lookup on the server name. Execute the command *nslookup <host>* where *host* is the fully qualified host name of the installation host. Repeat for each installation host. Note the reply from the command. Make a reverse lookup on the IP address returned by the command. Make sure that the primary host name is the same as the one returned by the name lookup. In short, for each host, the information across these commands and files should be consistent: *hostname*, */etc/hosts* (UNIX), *nslookup* (both ways) and *ifconfig* (UNIX) or *ipconfig* (Windows).
- Use a sequential port range on each host that spans 4000 ports (for example, port range 13000 - 17000) before the installation starts. FAST InStream uses a default base port number of 13000 and a default administration GUI port number of 16000 (base port plus 3000). Note that you have to be *root* (UNIX) or *admin* (Windows) to assign ports below 1024. Using ports below 1024 is not recommended and not possible with the FAST InStream installer when installing as a normal user.
- Make sure that no instance of the FLEXLM license manager is running on any of the installation hosts.
- In a multiple node environment, every host must be the same platform type.
- When installing on multiple nodes, make sure the date/time on the nodes are synchronized, especially if Status Server is on a different node than the Admin Services. If the nodes are not in sync, the Last Input time in Collection Overview may display an incorrect number."
- If you want to run FAST InStream on an NFS mounted directory, make sure that a lock daemon is running on the NFS server.

UNIX

- You must have write access to the temporary directory to install FAST InStream. The temporary directory is usually named */tmp* on Linux systems.
- Only *bash* shell is supported for default login. *C-shell* is not supported.

Windows

- Make sure there is no anti-virus software running on hosts where FAST InStream will be installed.
- If possible, install FAST InStream on a separate physical disk than the one Windows is running from (*C:*) Do not assign the paging file or system directories on this disk. The optimal is to install FAST InStream on a striped disk array (RAID 0).
- If a Multi Node installation is performed, the temporary directory of the user doing the installation needs to be on a partition with the *administrative share* enabled, and this user needs to be able to access that administrative share. The user's temporary directory is usually on the *C:* partition. To test if the administrative share is enabled and accessible for partition *C:* on the host *myhost.example.com*, execute the command *dir \\myhost.example.com\c\$* from a different host. This should produce the same output as the command *dir c:* run locally on *myhost.example.com*.

Web Browsers

The following lists the web browsers supported by FAST InStream:

- MS Internet Explorer (6.0 or later) -

When using Microsoft Internet Explorer to access the FAST InStream Administrator Interface, make sure that the Internet Explorer Enhanced Security Configuration is either disabled, or that the URL pointing to the FAST InStream Administrator Interface is added to the list of trusted sites.

- Netscape (7.1 or later)

Minimum Hardware Requirements

As a guideline we suggest at least 10 times the original data size available disk space plus approximately 1GB for the installation.

2GB is the recommended amount of memory although FAST InStream will run on machines with less memory. We also recommend that the SWAP size is set to twice the physical memory size of the machine.

FAST recommends a disk storage system that can handle a high number of disk transactions per second. A typical FAST InStream machine should also have one or two modern 1 GHz (or faster) CPUs.

Installation Types

The FAST InStream Installer provides three different installation types:

- **Single Node** - Installs all required, and the most common, components on a single machine. This installation type is primarily intended for evaluation or demonstration purposes. The installation requires very little user interaction, but the user should be familiar with most of the concepts explained for the Multi Node installation type before running the installer.
- **Multi Node** - Provides a fully interactive GUI for selecting and deploying components across all target hosts, and grouping these into clusters. This will build an *InstallProfile.xml* file which contains the full system description. This may be saved, and used in the Advanced Multi Node mode. This install type is available on all platforms in GUI mode (but requires X11 for UNIX platforms). It is not available in Console mode.
- **Advanced Multi Node** - Requires that the user has an existing *InstallProfile.xml* which describes the full installation across all deployed hosts. This install type allows you to work in *Console* mode. Use this mode when installing on hosts that do not support a graphical user interface. This will run the installer in text only mode and is especially useful for installation on hosts that do not have X installed.

Installation Concepts

Installation Directory - The root directory in which FAST InStream will be installed. This should not be an existing directory. For example:

Windows: C:\DataSearch

UNIX: /home/fastuser/datasearch

Base Port - The static ports used by FAST InStream will be offset from this value. Default is 13000, and a range of 4000 should be available above this.

Install Profile - The install profile defines the configuration setup that is created when installing FAST InStream. This configuration file allocates hosts to services; the file is named `InstallProfile.xml` and is by default saved in the installation directory.

Index Profile - The index profile defines the layout/schema of the searchable index, and defines how fields are to be treated by query and result processing. The index profile is defined through an XML based configuration file.

Before installing FAST InStream, you should select the index profile you want to use. For a test/development installation you may use one of the default index profiles, but in most cases it is required to use one of the default profiles and customize it for your application's needs. Refer to the *Index Profile Management* chapter of the *Configuration Guide* for a detailed description of the options and features that can be configured. This chapter also describes the feature set enabled in the two default index profiles that can be selected during installation.

The installation program provides you with three different choices for the index profile:

- **Web Profile** - This is a default index profile for a web search application that does not utilize the lemmatization feature.
- **Web profile with lemmatization** - This is a default index profile for a web search application that utilizes an advanced linguistic feature.
- **Custom Profile** - This choice enables you to use a customized index profile. You must edit and save the customized index profile prior to installation.

The FAST InStream distribution includes the following index profile examples that you may use as a basis when creating a customized index profile:

- *datasearch-4.x-default.xml* - This is the index profile selected if you choose **Web Profile** during installation
- *datasearch-4.x-lemmatization.xml* - This is the index profile selected if you choose **Web profile with lemmatization** during installation

- *datasearch-4.x-taxonomy.xml* - This is an index profile that is configured for use with the Taxonomy Toolkit. Otherwise, this profile is equal to *datasearch-4.x-default.xml*.

Crawler - When employing a Crawler for aggregating data, the owning company or organization's name along with the e-mail of the crawler-administrator is used as the user-agent identification string on visiting each web-server.

License File - FAST InStream requires that you provide a valid license file to complete the installation.

Chapter 2

Licensing

You will need a valid license file when installing FAST InStream. If you have not received a valid license file, refer to the FAST Support page in this guide for contact information.

Installing the License File

For a production license (purchased version of FAST InStream) you will need to supply a valid host ID for the server where you install FAST InStream in order for us to generate a valid license file.

Note! The master license file is connected to a license manager running on a specific machine. The *host-id* of this machine is input to the license generating process. Moving the license manager to another machine will invalidate the license. If you want to move the license manager, you need a new master license file with a *host-id* reflecting the new location. In addition, you need to edit the local license file copies to point to the new location.

A valid host ID can be retrieved in this way:

- 1 You will find the command `lmhostid` in your FAST InStream distribution (or in the `$FASTSEARCH/bin` directory for UNIX or the `%FASTSEARCH%\bin` directory for Windows if you have already installed FAST InStream).
- 2 Run `lmhostid` on the server where you want to install the license server for your FAST InStream. This will normally be the server you want to use as an admin node in your installation. This command will provide the following result (example):

The FLEXlm host ID of this machine is "000102dffcd1"

- 3 Include this host ID with your license request to FAST.

Note! Some systems include other programs for retrieving host ID. Do not use a program other than `lmhostid` for this purpose, as this may result in an invalid license file.

- 4 By default the license server selects a port number within the default range of 27000 and 27009 for the license service.

Note! This numbering can interfere with other FAST InStream components if the base port for the FAST InStream installation is in the 23000 - 27000 range.

If required, it is possible to specify another port number in the license file. The port number is an optional third parameter to the `SERVER` line in the license file. For example:

```
SERVER this_host ANY portnumber
```

The port number may be any unused port number.

- 5 Save the file with the name *fastsearch.lic*. You will be requested for the license file during installation.

Note! Ensure during a multi-node installation that you assign the license server to the host corresponding to the hostname/ID of the license file.

Refer to the *Appendix C License Manager* for further details on the licensing feature.

Upgrading the License File

If you need to upgrade the license file on an existing FAST InStream installation or if you added new optional features, complete the following:

- 1 If you need to request a new license file, refer to the FAST Support page in this guide for contact information. Include your host ID and host name in the correspondence.
- 2 Copy the new license file you received from FAST to `./etc/fastsearch.lic` in the FAST InStream install directory. For example:

UNIX: `$FASTSEARCH/etc/fastsearch.lic`

Windows: `%FASTSEARCH%\etc\fastsearch.lic`

In a multi-node system, copy the license file to the host running the license server.

- 3 Restart FAST InStream to activate the new license.

Note! Note: If you are upgrading with new license for Increased Data Volume (GB) or additional Content Connectors, it is not necessary to restart FAST InStream. Instead follow the procedure outlined in step (4).

To restart FAST InStream perform the following steps:

UNIX:

- a Stop FAST InStream:

```
$ cd $FASTSEARCH/bin
$ source ./setupenv.sh or ./setupenv.csh (depending on command line
shell)
$ ./nctrl stop
```

- b Wait until all FAST InStream processes are properly terminated.

- c Start FAST InStream:

```
$ ./nctrl start
```

Windows:

- a Stop FAST InStream:

Go to **Settings --> Control Panel --> Administrative tools --> Services**

Stop FAST InStream Node Controller Service.


- b Wait until all FAST InStream processes are properly terminated.

- c Start FAST InStream:

Go to **Settings --> Control Panel --> Administrative tools --> Services**

Start FAST InStream Node Controller Service.

Refer to the *Operations Guide* for more detailed considerations on how to restart a live system with active data sources.

- 4 For Increased Data Volume (GB) or additional Content Connectors it is not required to restart FAST InStream, you only need to restart the License Manager:
 - a Select **System Management** from the Administrator interface.
 - b From the **Installed module list**, click the  restart button to the right of the **License Manager**.

This action does not affect the operation of FAST InStream systems; all processes continue running during the license manager restart process.

Chapter 3

Setup for FAST InStream in a UNIX Environment

This chapter explains the setup required before installing FAST InStream in a UNIX environment. This chapter includes:

- Preparation for UNIX Platforms using `ssh`
- Starting the Installation for UNIX Platforms

The installation process is estimated to last approximately 10 to 20 minutes. This can be much longer however, depending on the size of your configuration and the performance of your network and hosts.

Note! `ssh` is the preferred command interface to use on a UNIX platform since it is possible to track a command successfully through the interface.

Preparation for UNIX Platforms using *ssh*

Complete this subsection if you will be installing FAST InStream on a UNIX platform with the *ssh* command interface.

The following preparations must be carried out on all hosts that will be part of the FAST InStream configuration.

- 1 Verify that the operating system and patch level for your system is supported by FAST. Refer to *Chapter 1 Installation Requirements and Concepts*, section *Operating Systems* in this Guide for a list of supported systems and their respective patches.

To get the existing operating system and patch level information for your system, log on as a UNIX user and type in the following command:

```
uname -a
```

- 2 Define a new username and make sure you have a login account on all hosts and that they all have the same username. It is recommended that you have a dedicated local account for FAST InStream on all hosts that will not be used for other purposes. This guide references the username of *fastuser*.
- 3 Change permissions for the home directory of the UNIX user to enable read and execute permissions for group and others (*rxwxr-xr-x*). For example:

```
chmod 755 $HOME
```

- 4 Generate public-keys.

For *ssh2*: it is

```
ssh-keygen -t rsa OR ssh-keygen -t dsa
```

For *ssh1*:

```
ssh-keygen OR ssh-keygen -t rsa1
```

Authentication identity is contained in:

```
$HOME/.ssh/id_rsa (ssh2 RSA authentication),  
$HOME/.ssh/id_dsa (ssh2 DSA authentication) or  
$HOME/.ssh/identity (ssh1 RSA authentication)
```

Public key for authentication (public part of the identity file in readable form) is contained in:

```
$HOME/.ssh/id_rsa.pub (ssh2 RSA authentication),  
$HOME/.ssh/id_dsa.pub (ssh2 DSA authentication) or  
$HOME/.ssh/identity.pub (ssh1 RSA authentication)
```

- 5 Append the public-key of the user that runs the install script to the appropriate authorized keys directory on the remote hosts. For example:

- If you use *ssh2*, append the public key to `$HOME/.ssh/authorized_keys2`
- If you use *ssh1*, append the public key to `$HOME/.ssh/authorized_keys`

Do this for all the hosts you will install files to. Ensure that the permission bits are restrictive on the `.ssh` (mode 0700 (rwx-----)) directory and the `authorized keys` (mode 0644 (rw-r--r--)) file.

- Ensure that all the target nodes are in your `known_hosts` file (`known_hosts2` for `ssh2`). To do this, run a simple `ssh` to the target nodes. If a node is not in the `known_hosts` file, you will get the question:

```
The authenticity of host 'fastnode.<mysitename>.com (xx.xx.xx.xx)'
can't be established. RSA1(RSA for ssh2)key fingerprint is
xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx.
Are you sure you want to continue connecting (yes/no)?"
```

Answer yes to place the node in the known_hosts file.

In this case fastnode and fastnode.<mysitenam>.com are not the same nodes. Always use Fully Qualified Hostnames.

- 6** Test the setup by doing the following on `instmaster.<mysitename>.com` as `fastuser` for all hosts in the system:

```
ssh otherhost echo hello
```

where `otherhost` is the name of a host in the system.

If the terminal output for all hosts is `hello`, then the setup is successful.

If the terminal output for any host is a message such as `permission denied`, then the setup is not successful; verify that steps 1 through 5 have been carried out for any host that does not echo hello.

Make sure that no password has to be entered while testing the setup.

Starting the Installation for UNIX Platforms

Complete this subsection to start the installation. The host can be any UNIX host with a *bash* shell.

In this example, <OS> refers to the name of the operating system (for example, *Linux*) specific to the platform.

- 1 Start the installation process.

From CD-ROM: If you received the FAST InStream software on a CD-ROM:

- a Insert the CD-ROM into the drive.
- b Open a shell and change the directory to the root directory of the CD-ROM.

From FTP: If you are downloading the FAST InStream software from the FAST FTP site:

- a Download the file identified by your FAST contact.
- b Open a shell.
- c Uncompress the downloaded file `gunzip setup_<OS>.tar.gz`.
- d Unpack the uncompressed file: `tar -xvf setup_<OS>.tar`. The contents of the folder, `setup_<OS>.bin` and `setup_<OS>.jar` are extracted.

- 2 The FAST InStream Installer will, from a single source host, install the selected components on all targeted machines.

GUI Mode - This is the default mode. Requires X11 for UNIX. For this mode, run:

```
./setup_<OS>.bin
```

Console Mode - Use this mode when installing on hosts that does not support a graphical user interface. This will run the installer in text only mode. For this mode, run:

```
./setup_<OS>.bin -console
```

- 3 License file information is required. Contact FAST if you have not received a `fastsearch.lic` license file.
- 4 Upon completion, the *Initializing InstallShield Wizard* message is displayed on the screen, followed by the product logo.
- 5 Depending on whether you are installing FAST InStream on a single or multiple nodes, proceed to *Chapter 5 Installing FAST InStream in a Single Node Environment* or the *Chapter 6 Installing FAST InStream in a Multiple Node Environment* to complete the installation.

Chapter 4

Setup for FAST InStream in a Windows Environment

This chapter explains the setup required before installing FAST InStream in a Windows environment.

Preparation for Windows Platforms

The following lists preparation information:

- License file information is required. Refer to Chapter 2 *Licensing* for details.
- You must have administrative privileges to install FAST InStream. The password for this account must be the same on all target machines.

Starting the Installation for Windows Platforms

- 1 Ensure that you have **Log-On as Service** privileges. To enable **Log-On as Service**:
From the Windows **Start Menu**, select **Control Panel -> Administrative Tools -> Local Security Policy -> Local Policies -> User Rights Assignment -> Log on as a Service -> Add**.
- 2 If you received the FAST InStream software on a CD-ROM, then insert the CD-ROM into the drive.

If you are downloading the FAST InStream software from the FAST FTP site, then extract and unzip the `setup_WindowsNT.zip` file.
- 3 Start the installation. To do this:
From the Windows **Start Menu**, select **Control Panel -> Add/Remove Programs**.
- 4 Select and install `setup.exe`.
- 5 Upon completion, the *Initializing InstallShield Wizard* message is displayed on the screen, followed by the product logo.
- 6 Depending on whether you are installing FAST InStream on a single or multiple nodes, proceed to Chapter 5 *Installing FAST InStream in a Single Node Environment* or Chapter 6 *Installing FAST InStream in a Multiple Node Environment* to complete the installation.

Chapter 5

Installing FAST InStream in a Single Node Environment

Overview

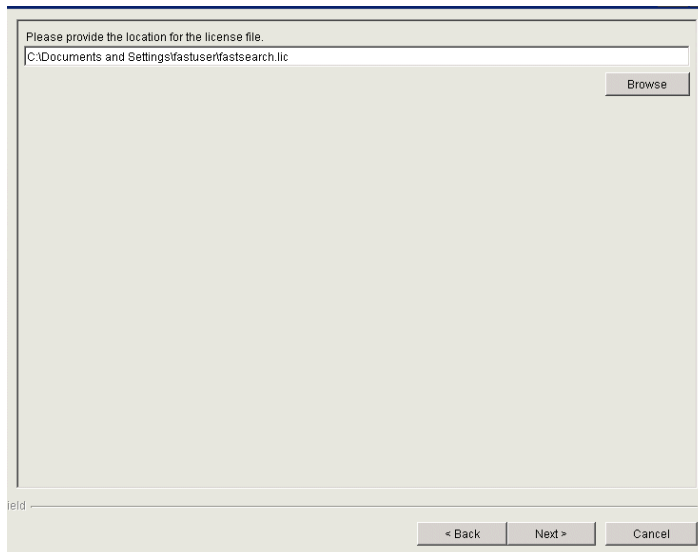
This chapter describes a sample installation for FAST InStream in a single node environment.

Note! This subsection shows a sample installation using GUI; the installation can also be done in console mode. Refer to Chapter 3 *Setup for FAST InStream in a UNIX Environment* if you want to set up your installer to perform the installation in console mode.

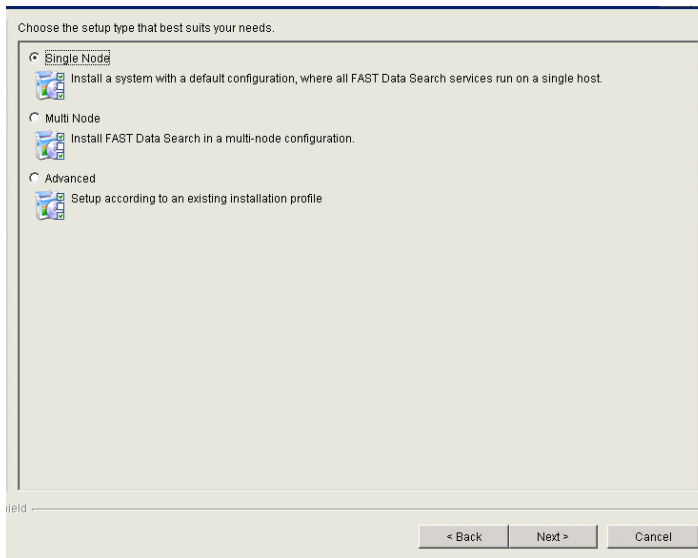
License file information is required. Refer to Chapter 2 *Licensing* for details.

Installation

- 1 After the product logo is displayed on the screen, the *InstallShield Wizard Welcome* message is displayed on the screen.
- 2 Click **Next** and the **License Agreement** screen is displayed. Read the terms of the End User License Agreement. To accept the terms of the License Agreement, select “*I accept the terms of the license agreement*” and click **Next**.
- 3 The license file location screen appears. Either type the absolute path to the license file or click the **Browse** button to navigate to it. Contact FAST for a license file. Click **Next**.



- 4 The Installer screen that allows you to choose the type of node setup you want is displayed. Select **Single Node** and click **Next**.

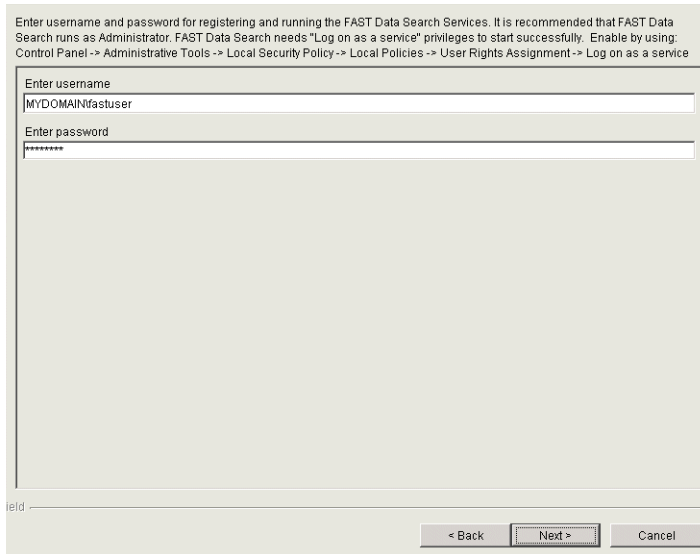


- 5 For Windows installations, the next Installer screen requires you to enter a username and password for registering and running the FAST InStream Services.

It is recommended that FAST InStream run as Administrator.

FAST InStream needs **Log-On as a Service** privileges to start successfully. Enable by using: **Control Panel -> Administrative Tools -> Local Security Policy -> Local Policies -> User Rights Assignment -> Log on as a service**.

Upon completion, click **Next**.



- 6 The next Installer screen allows you to determine in which directory you want FAST InStream to reside; in the default directory or in a directory of your choice.

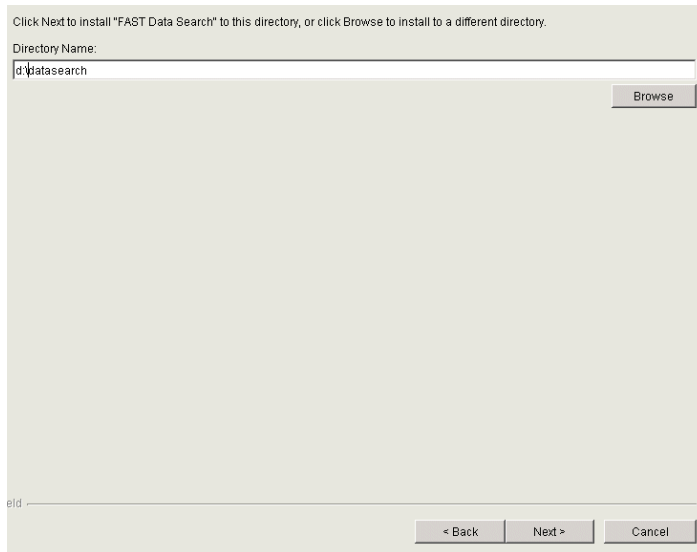
UNIX: The default home directory is the subdirectory *datasearch* located in the home directory of the FAST InStream user. For example, */home/fastuser/datasearch*.

Windows: The default home directory is the *C:\DataSearch* directory. If possible, install FAST InStream on a separate physical disk than where Windows is running (*C:*), as this partition should only be used if evaluating FAST InStream. (This example selects *d:*)

Use the **Browse** button if you want to change the installation location from the default directory to another directory.

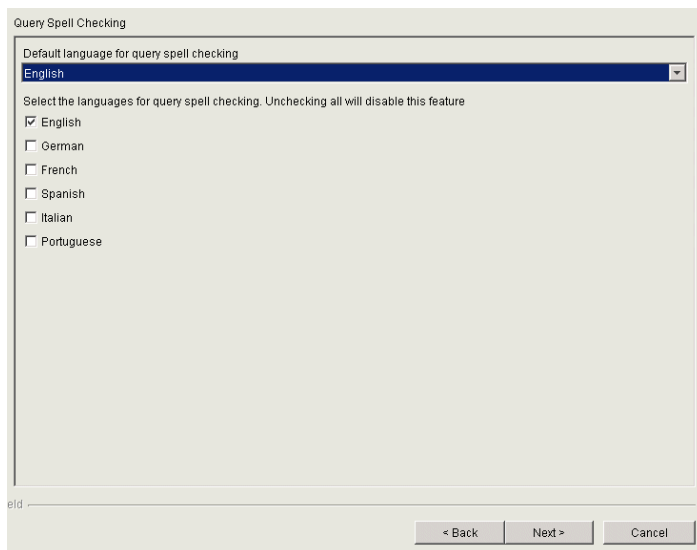
Note! If you select a different location than the default, make sure the location name you choose does not contain spaces.

Click **Next**.



- 7 The **Select Languages for query spell checking** screen is displayed if you have installed a new profile. In order to reduce memory consumption, you may consider activating only those dictionaries that will be used. For information on how lemmatization impacts memory consumption, refer to *Chapter 7 Benchmarking*, section *Lemmatization Memory Consumption* in the *Deployment Guide*. Select the languages for query spell checking. Click **Next**.

Consult FAST if you need to add new dictionaries after installation.



- 8 The next Installer screen allows you to configure the **base port** number for FAST InStream. The default base port number is *13000*. Click **Next** if you want to keep the default base port. Otherwise, change the port number in the text box, then click **Next**.

Please make sure that a continuous range of 4000 TCP ports are available on the system. This port range is allocated starting at a configurable base port.

Please enter base port

13000

< Back Next > Cancel

This is a screenshot of a Windows-style installer window. At the top, a message states: 'Please make sure that a continuous range of 4000 TCP ports are available on the system. This port range is allocated starting at a configurable base port.' Below this is a text input field with the label 'Please enter base port' and the value '13000'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border.

- 9 The next Installer screen allows you to choose which index profile setup to use for FAST InStream. The default type is **Web profile**. Click **Next** to keep the default.

Choose index-profile type

☒ Web profile

☐ Web profile with lemmas

☐ Custom

< Back Next > Cancel

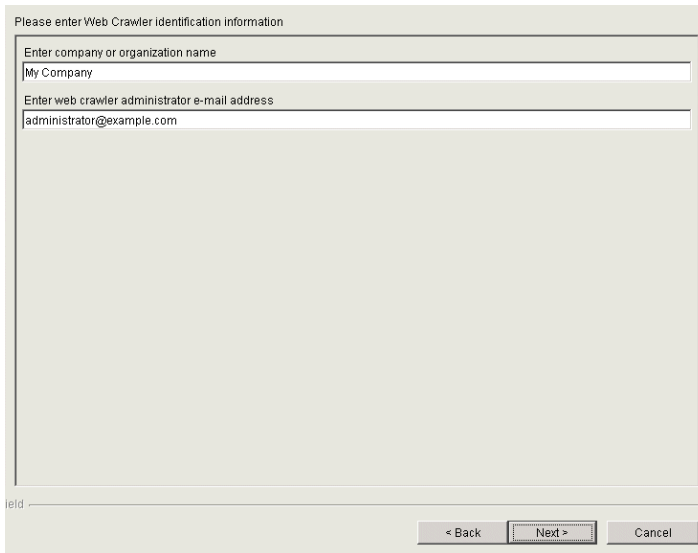
This is a screenshot of a Windows-style installer window. It has a title bar and a main area with the text 'Choose index-profile type'. There are three radio button options: 'Web profile' (which is selected), 'Web profile with lemmas', and 'Custom'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border.

Refer to Chapter 1 *Installation Requirements and Concepts*, section *Installation Concepts* for details on how to choose a non-default index profile.

If you have defined a customized index profile for your search application, perform the following steps:

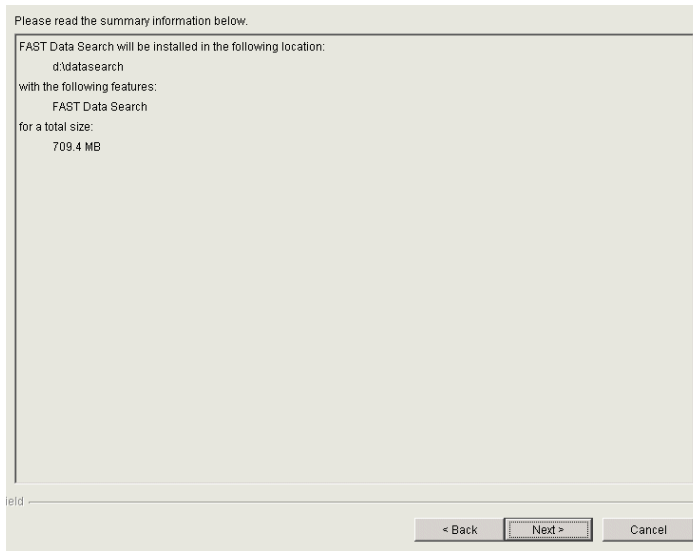
- a** Select **Custom** and click **Next**. The **Custom Index Profile** location screen appears.
- b** Either type the absolute path to the custom index profile or click the **Browse** button to navigate to the file.
- c** Click **Next**.

- 10** If your license includes a crawler, then the **Web Crawler identification** screen appears. Precisely enter your company or organization name and administrator e-mail address. This is used as the crawler's user-agent identification value when crawling web sites. Click **Next**.



The image shows a software installation window titled "Please enter Web Crawler identification information". It contains two text input fields. The first field is labeled "Enter company or organization name" and contains the text "My Company". The second field is labeled "Enter web crawler administrator e-mail address" and contains the text "administrator@example.com". At the bottom of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

- 11** The **Summary Information** screen is displayed. Verify that the destination directory is correct. If you want to make changes to the directory name, click **Back** and make the necessary changes. If the destination directory is accurate, click **Next**.



- 12** The **Installing...** screen is displayed while FAST InStream is installed on your computer. You may click **Cancel** at any point, leaving an unfinished installation. If you cancel the installation, you cannot resume the installation, you will need to reinstall the product.
- 13** To start FAST InStream, click **Yes**.
- 14** Upon completion, the final screen is displayed. Click **Finish**.
- 15** Click on **Browser** and open the administrator interface (Admin GUI). The URL by default is:

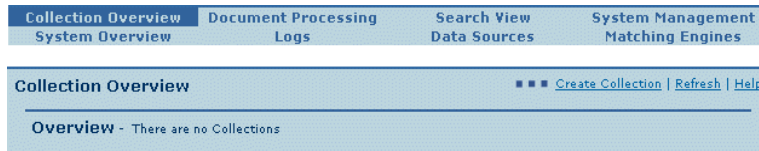
`http://<hostname>:<base_port+3000>`

where <hostname> is the name of the host that runs the Admin GUI, and <base_port> is the port for that host. For example, if the Admin GUI was installed on host1.<mysitename>.com using base port 13000 (default), then open URL:

`http://host1.<mysitename>.com:16000/`

Refer to *Chapter 1 Installation Requirements and Concepts*, section *Web Browsers* for a list of supported browsers.

- 16 The FAST InStream administrator interface screen appears on the screen.



- 17 To verify that FAST InStream was installed successfully, select **System Overview** from the administration interface navigation bar and verify that all components have a **Responding** status in *green*. Also, select **Logs** from the navigation bar to verify that there are no errors.
- 18 Proceed to the *Basic Setup* chapter in the *Configuration Guide* for further instructions.

Chapter 6

Installing FAST InStream in a Multiple Node Environment

This chapter describes a sample installation for FAST InStream in a multiple node environment.

Note! This chapter shows a sample installation using GUI; the installation can also be done in console mode. Refer to Chapter 3 *Setup for FAST InStream in a UNIX Environment* if you want to set up your installer to perform the installation in console mode.

License file information is required. Refer to Chapter 2 *Licensing* for details.

FAST InStream Role Assignments

A FAST InStream installation typically spans multiple hosts, each assigned one or more of the following roles:

- Content Collection
- Document Processing
- Indexing and Query Processing
- Administrative Services

Content Collection

Content is first collected and prepared for processing. Content may be collected by crawling a set of web-servers, traversal of locally accessible file servers, selection from Relational Databases, or by pushing from custom built applications through the Content API.

- **Crawler** - The FAST Enterprise Crawler traverses web servers and retrieves all files including HTML or WML pages. The Crawler is optional, and only one instance is allowed per host.
- **Content Distribution Service**- The Content Distribution service routes information from the data sources to the document processors. This is a required service. Multiple distributors are allowed, but only one per host.

Document Processing

The **Document Processing** service processes collected data through a series of pipelines. Typical tasks include:

- Teaser generation
- Vectorization (such as *Find Similar*)
- Lemmatization
- Language Detection
- Encoding Normalization
- XSLT processing of XML Data
- Anchor Service
- Status Service

The Document Processor transforms data that it receives from the Content Distributor(s) into a format that the Search Service can understand. This is a required service. Multiple instances may be deployed, even on the same host.

Anchor Service is used to store anchor text and link cardinality. These are properties of URL links and web pages that are useful in determining the relevancy of documents.

Status Service is responsible for tracking the status of documents that have been entered into FAST InStream. The status service will for example know if a document has been run through document processing, if it has become searchable or if an error has occurred that prevents it from being searchable. In a Multi Node setup it is highly desirable that the status service and the administrative services run on different hosts.

Indexing and Query Processing

The processed data is indexed and made available to the end user.

- **Query Result Processing Service** - Responsible for handling search queries. This is a required service, with only one instance allowed per host. Each Query Result processor (QR Processor) is grouped together with a Search Service. Several QR processors can be grouped with the same Search Service.
- **Search Service** - The Search Service builds an index from the data it receives, so that the indexed data can be searched. This is a required service. The Search Service can consist of multiple indexers and search components, but only one pair of indexer/search components on each machine.

Administrative Services

Central control of configuration, logging and licenses. Only one instance of any of the following services is allowed per installation.

Administrative Services includes:

- **Administration GUI** - The administrator interface allows you to monitor and configure the system run-time. This is a required service.
- **Configuration Service** - A central hub for coordination and configuration across all deployed services. This is a required service.
- **License Service** - Provides central management of the FAST InStream license. This is a required service, and only a single instance is allowed.
- **Log Service** - Provides a central repository for log messages from the different services deployed in the system. This is a required service.
- **Name Service**
- **Storage Service**
- **BMCP**

Deployment Considerations

Before installing and setting up the system, give serious thought to which hosts should be employed to the different roles, as the characteristics of the services vary with respect to memory, disk and CPU intensiveness. The following lists some general guidelines:

- Place the Content Collection on a separate host from the Indexing and Query Processing roles.
- Determine whether the largest work load is on content collection and document processing or on alert or user queries. Deploy your hosts accordingly.

Document processing may be an area where special considerations are needed when scaling for very dynamic content, or installations with very large document volumes. Consider deploying multiple Document Processors preferably across multiple hosts.

Installer Concepts

The **Installer** provides the basis for configuring the Install Profile for a multiple node installation. It consists of three parts: Hosts, Services and Installation overview.

Hosts

You can add, delete and/or configure the hosts included in the FAST InStream installation. This portion of the Installer consists of:

Hosts - provides a list of hosts currently in the configuration.

Host configuration - allows you to enter specific host information such as hostname, username, installation directory, temporary directory, base port and remote command information for installations in UNIX environments.

Services

You can add, delete and /or configure the services to be part of the FAST InStream installation. Services include all Administrative services such as Admin GUI, Anchor Service, Config Service, Content Distribution Service, Document Processing Service, License Service, Log Service, Name Service, Status Service, Storage Service, Query Result Processing Service, Search Service, and Crawler. Depending on the service, a single service can span several hosts.

This portion of the Installer consists of:

Included services - list of services available in the configuration.

Service properties - configuration information about the service currently selected including the service name (type), and whether is it:

Required: service must be present in the configuration

Single instance: there can be only one instance of the service

Single node: services that span a single host

A message is displayed if the service is not yet configured.

When configured, the font for the service listed in the Included services box changes to black; if not configured, then font remains red.

Installation Overview

You can view the configuration summary. This portion of the Installer consists of:

Status - current status of the configuration, including errors in setup such as missing service or improper configuration of service.

Service view - summary list of currently supported services by type (name) and whether or not they use required, single instance or single node service properties.

Install profile - saves the installation configuration, displays the `InstallProfile.xml` file. Refer to the *Installation Profile Example* appendix for an `InstallProfile.xml` file example. This installation profile may then be used when running the installer in Advanced Mode.

Installation

This sample *Multi Node* installation configures a three node setup.

This configuration process must be applied to every host in the system.

Host and Services Allocation

- *host1 (dev1.ad.fast.no):*
 - Administrative services (including Admin GUI, Config Service, License Service, Log Service, Name Service, Storage Service)
 - Anchor Service
 - Content Distribution Service
 - Document Processing Service
 - Status Service
- *host2 (dev2.ad.fast.no):*
 - Search Service
 - Query Result Processing Service
- *host3 (dev3.ad.fast.no):*
 - Crawler

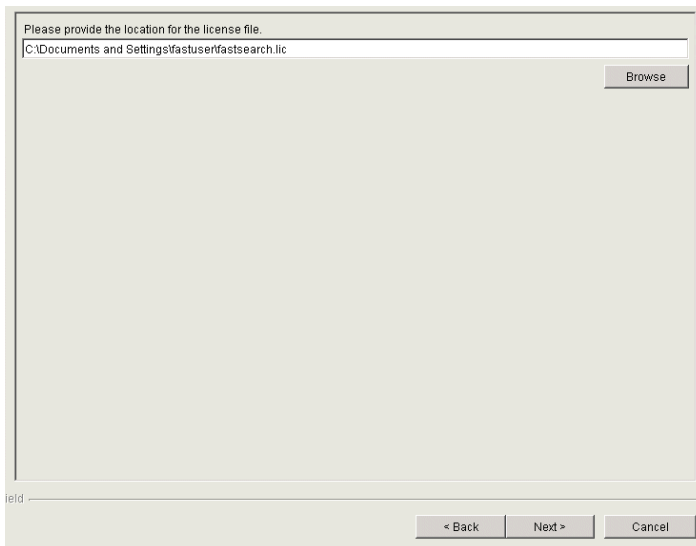
There are certain services that can be allocated more than once. The following services can be allocated in more than one instance:

- Content Distribution Service
- Document Processing Services
- Query Result Processing Service
- Search Service

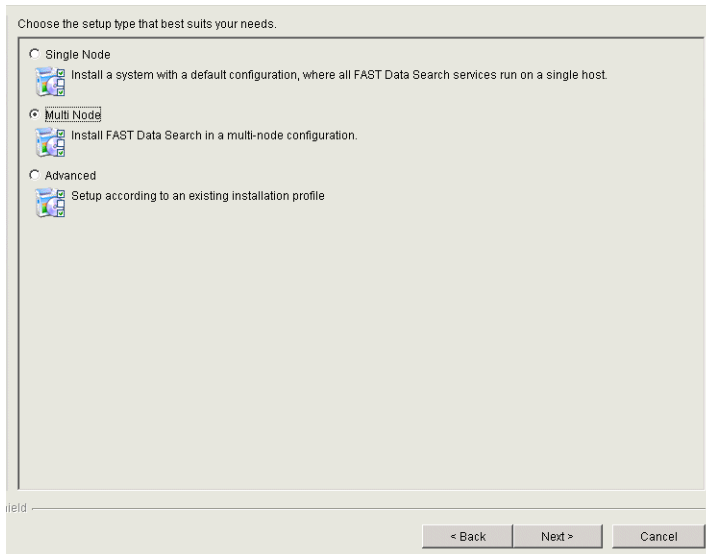
One instance of each of these services is required; additional instances are not required services so are not necessary to complete a FAST InStream installation. These services can be added at installation or after FAST InStream has been installed. Refer to the *Configuration Guide*.

Starting the Installer

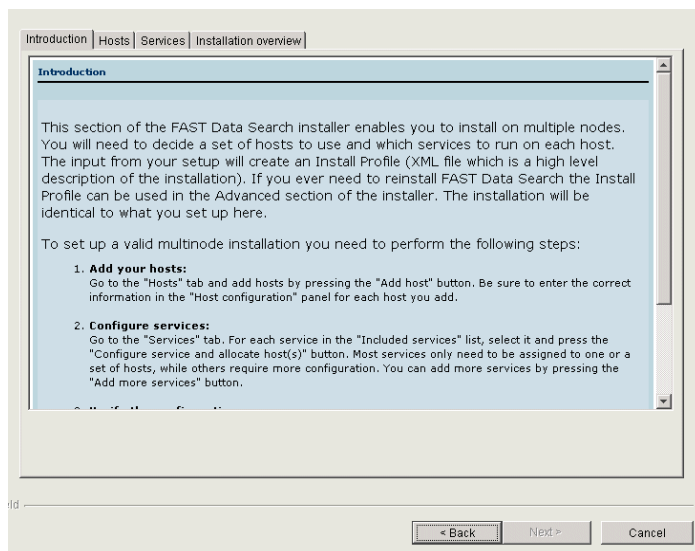
- 1 After the product logo is displayed on the screen, the *InstallShield Wizard Welcome* message is displayed on the screen.
- 2 Click **Next** and the **License Agreement** screen is displayed. Read the terms of the End User **License Agreement**. To accept the terms of the License Agreement, select the “*I accept the terms of the license agreement*” and click **Next**.
- 3 The license file location screen appears. Either type the absolute path to the license file or click the **Browse** button to navigate to it. Contact FAST for a license file. Click **Next**.



- 4 The Installer screen that allows you to choose the type of node setup you want is displayed. Select **Multi Node** and click **Next**.



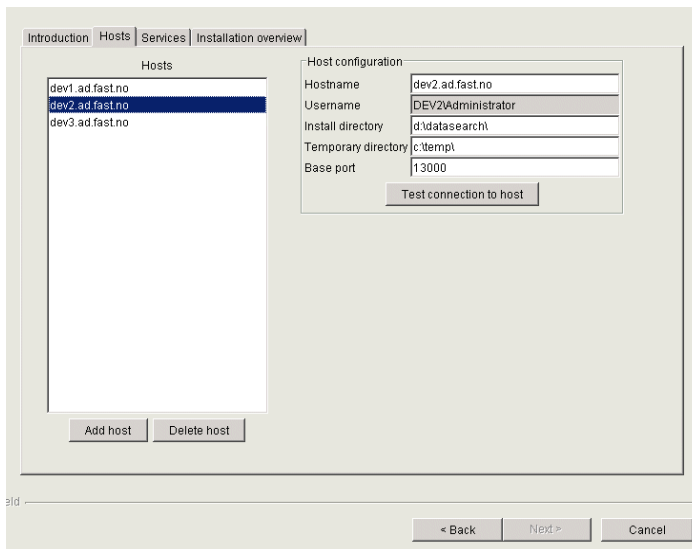
- 5 For Windows installations, enter the username and password for running Windows services. Upon completion, click **Next**.
- 6 The Installer **Introduction** screen provides a summary of the events that happen during the configuration setup or *Install profile* process. It briefly describes the **Hosts**, **Services**, and **Installation Overview** selections.



Adding Hosts

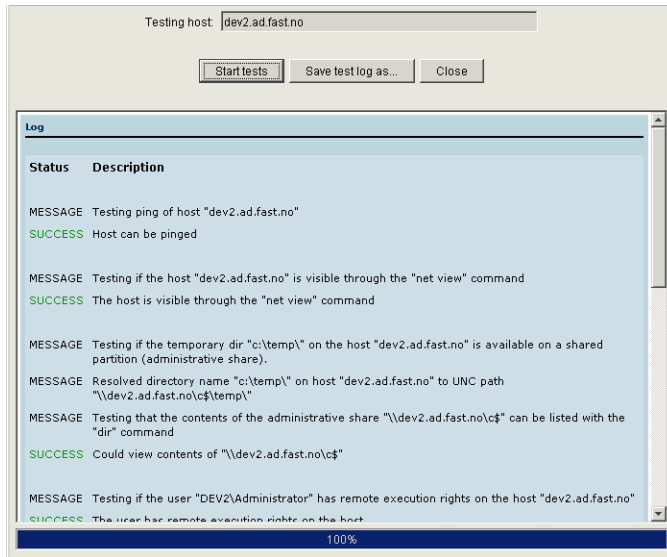
- 7 Select **Hosts** to configure the hosts for the installation.
 - a Click **Add host** and the first host (*dev1.ad.fast.no*) is added to the list.
 - b Highlight *dev1.ad.fast.no* and the configuration information for that host is displayed.

If necessary, change the Hostname, Username, Install directory, Temporary directory, Base port and Remote command.
 - c Repeat substeps **a** and **b** to add the second and third hosts (*dev2.ad.fast.no* and *dev3.ad.fast.no*).



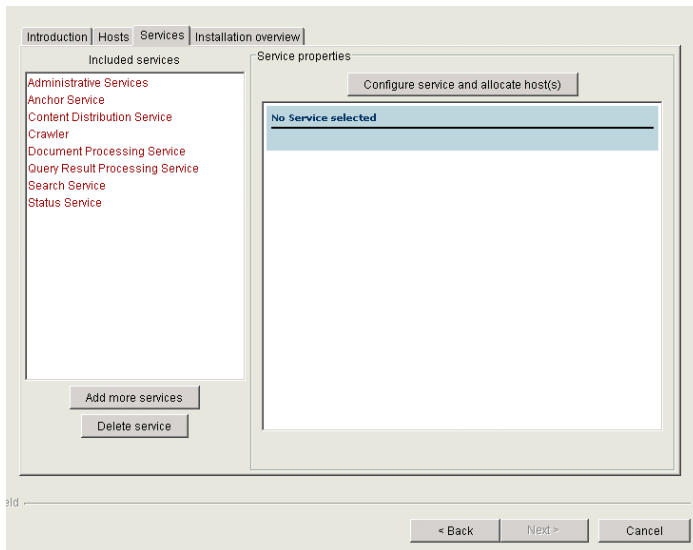
- 8 Check to make sure the host connections are configured properly. Highlight the host to be tested, click **Test connection to host** and the following screen is displayed. Click **Start tests** to begin testing if it is possible to install on the host. For each test, information about what is being tested and the result of each test is displayed. The result of each test can either be **Success** or **Error**.

Upon completion of the test(s), click **Close** and you are returned to the **Hosts** screen. Click **Next**.



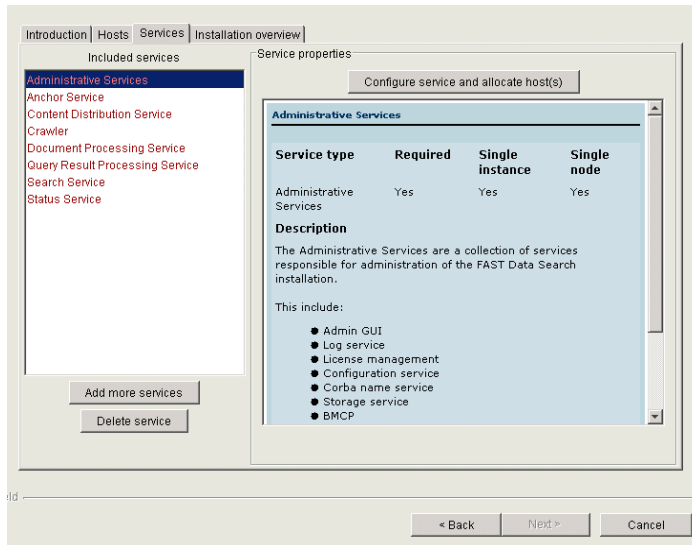
Allocating Required Services to host1

- 9 Select **Services** and the screen provides you with a list of available Services.

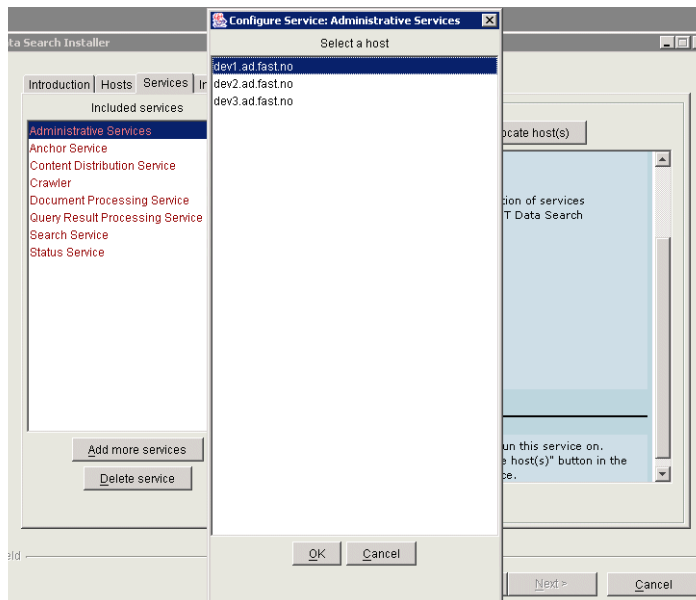


- 10 Highlight the **Service** to be configured on *dev1.ad.fast.no*.

The first service to be added is **Administrative Services**. Highlight **Administrative Services** and **Service properties** information is displayed. Refer to *Services* on page 35 for Service type information.

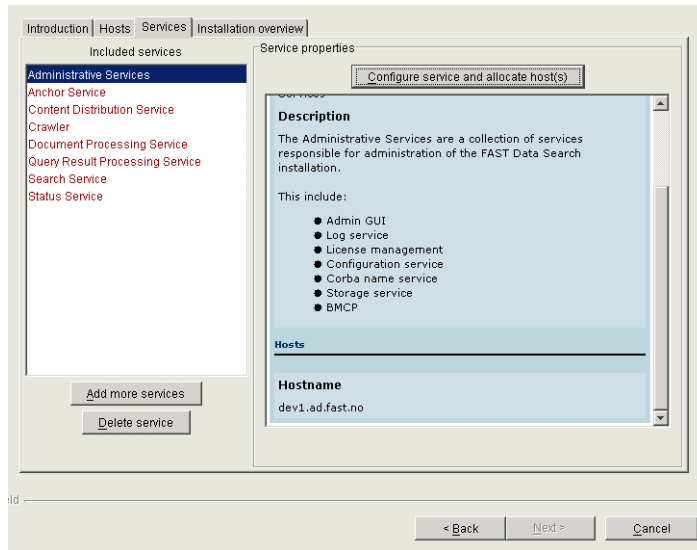


- 11 Click **Configure service and allocate host(s)** and the **Select a host** pop-up window is displayed. Highlight *dev1.ad.fast.no* and click **OK**. You are returned to the **Services** screen.



- 12 The host (*dev1.ad.fast.no*) is now configured with **Administrative Services**.

Note that after a service has been configured, (1) the font color used for the service changes color - from red to black font, and (2) the hostname is listed in the service properties portion of the screen.

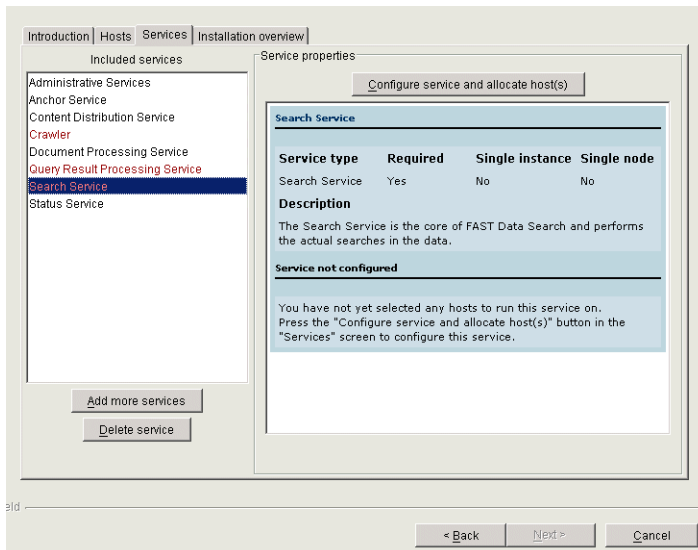


- 13 Repeat steps 10 through 12 to allocate the remaining services to *dev1.ad.fast.no*. Remaining services to be assigned to this host are **Anchor Service**, **Content Distribution Service**, **Document Processing Service** and **Status Service**.

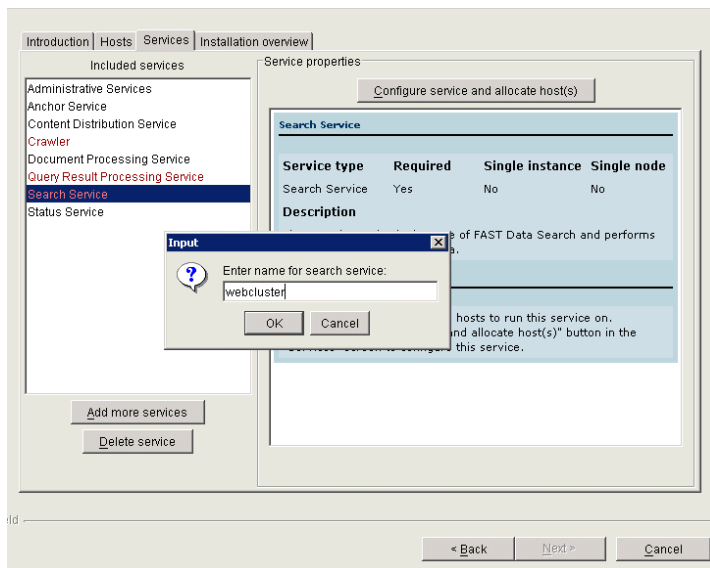
Allocating Required Services to host2

- 14 Highlight the **Service** to be configured on *dev2.ad.fast.no*.

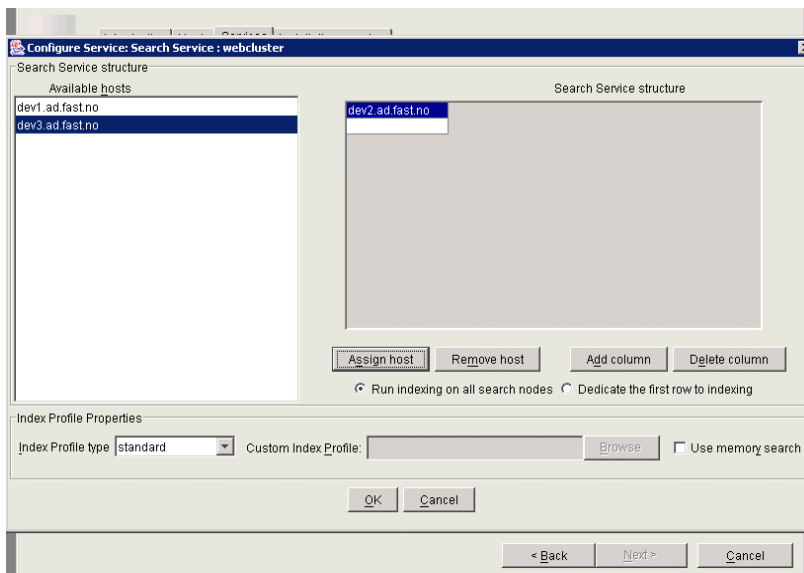
The first service to be added is **Search Service**. Highlight **Search Service** and **Service properties** information is displayed.



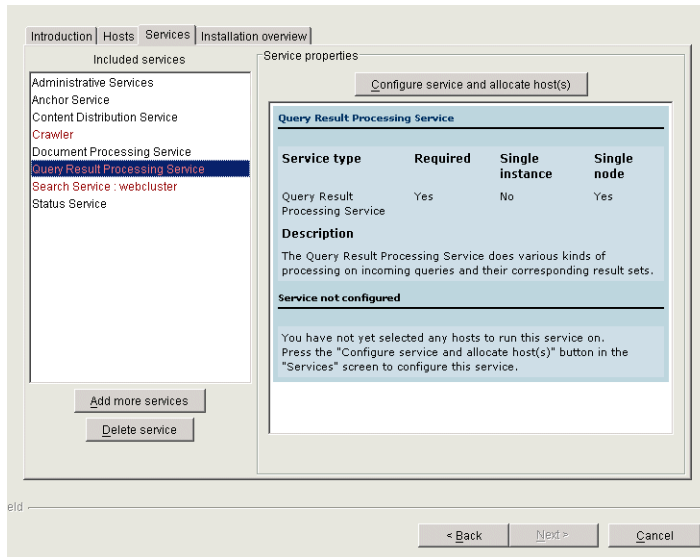
- 15** Click **Configure service and allocate host(s)** and the **Input** pop-up window for the Search Service is displayed. This sample names the default cluster *webcluster*. Click **OK**.



- 16** The **Configure Service: Search Service** pop-up window is displayed. Configure the host. Click **OK**. You are returned to the **Services** screen.



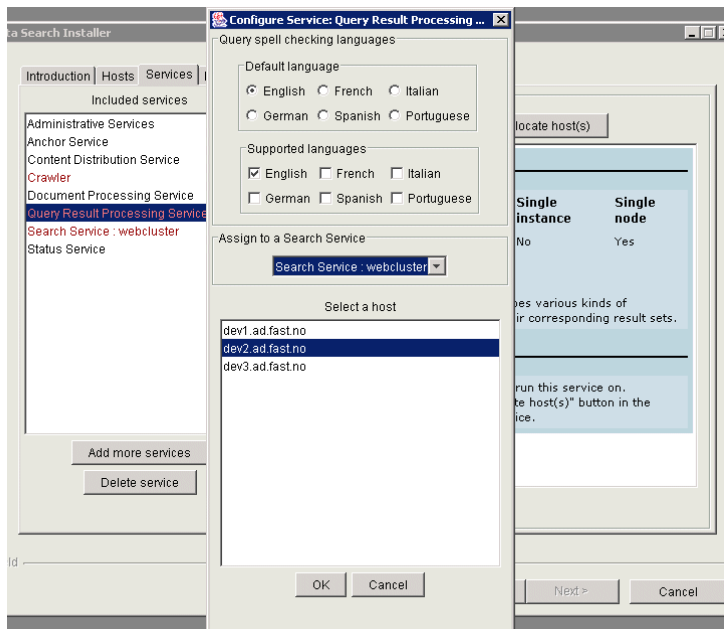
- 17 The second service to be added is **Query Result Processing Service**. Highlight **Query Result Processing Service** and **Service properties** information is displayed.



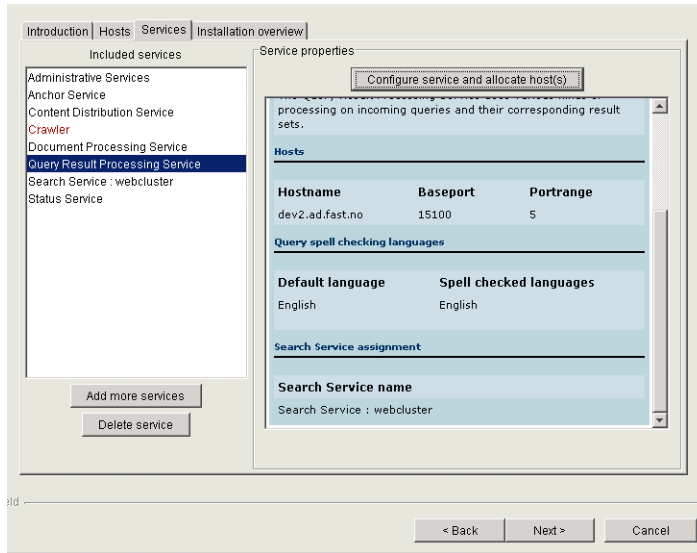
18 Click **Configure service and allocate host(s) and the **Configure Service: Query Result Processing Service** pop-up window is displayed.**

- a** Complete the **Query spell checking** portion of the screen. In order to reduce memory consumption, you may consider activating only those dictionaries that will be used. Select the languages for query spell checking.
- b** Highlight *dev2.ad.fast.no* as the selected host.
- c** Click **OK**. You are returned to the **Services** screen.

Consult FAST if you need to add new dictionaries after installation.



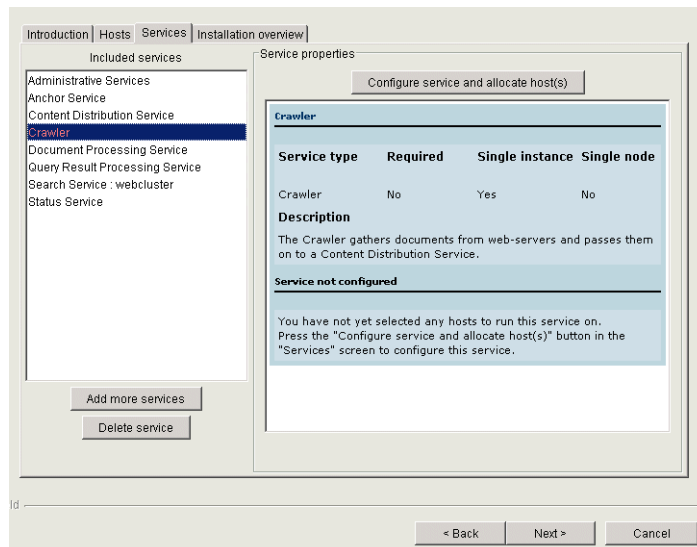
19 The host (*dev2.ad.fast.no*) is now configured.



Allocating Required Services to host3

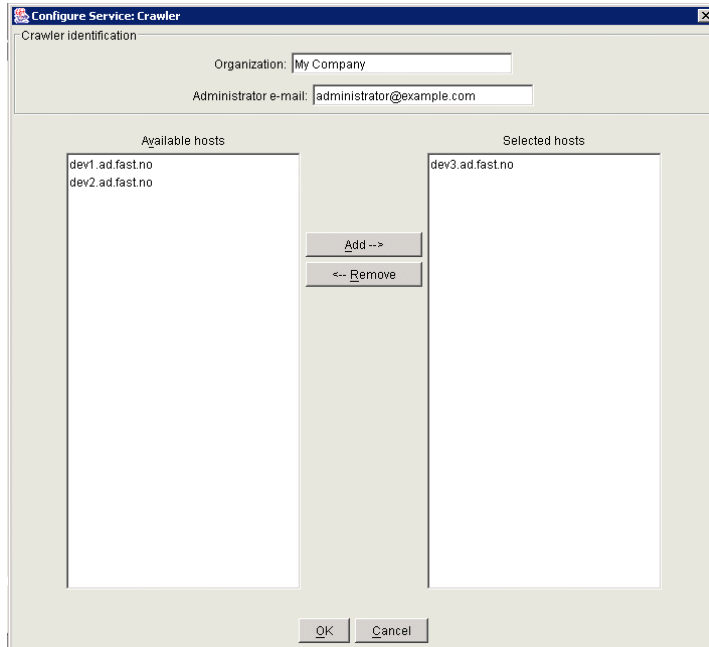
20 Highlight the **Service** to be configured on *dev3.ad.fast.no*.

The only service to be added is the **Crawler**. Highlight **Crawler** and **Service properties** information is displayed.



21 Click **Configure service and allocate host(s)** and the **Configure service: Crawler** pop-up window is displayed.

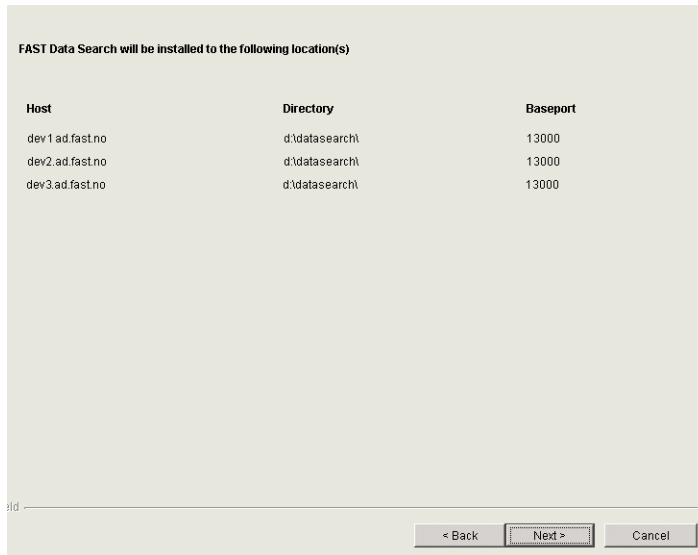
- a** Enter details in **Crawler identification**. Precisely enter your company or organization name and administrator e-mail address. This is used as the crawler's signature card when crawling web sites.
- b** Highlight *dev3.ad.fast.no* and click **Add**.
- c** Click **OK**. You are returned to the **Services** screen.



22 The host (*dev3.ad.fast.no*) is now configured.

Completing the Installation

- 23 When all services have been configured the **Next** button will be enabled. Click **Next**. The installer performs the same tests as it did during the **Test connection to host**.
- If a test is not successful, you are returned to the previous screen.
 - If all tests are successful, the Installation overview screen is displayed. Press **Next** to complete the installation.



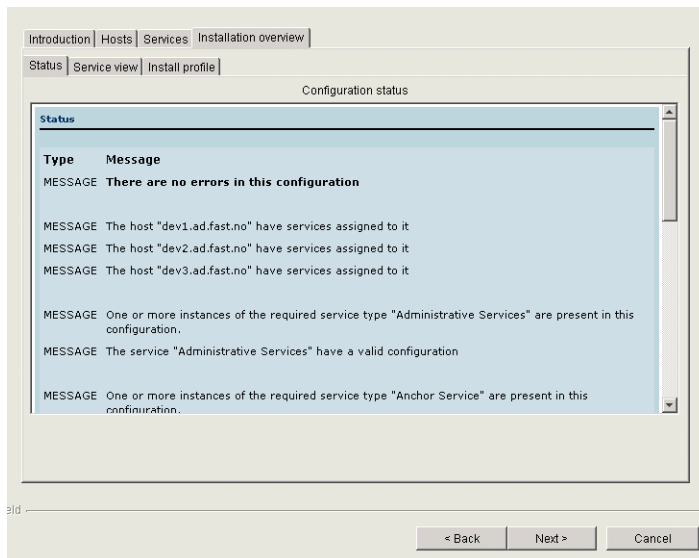
- 24 Click on browser and open the administrator interface (Admin GUI). The URL by default is:
- `http://<hostname>:<base_port+3000>`
- where <hostname> is the host name that runs the Admin GUI, and <base_port> is the port for that host. For example, if the Admin GUI was installed on `host1.<mysitename>.com` using base port 13000 (default), then open URL:
- `http://host1.<mysitename>.com:16000/`
- 25 Refer to Chapter 1 *Installation Requirements and Concepts*, section *Web Browsers* for a list of supported browsers.
- 26 The FAST InStream administrator interface screen appears on the screen.
- 27 To verify that FAST InStream was installed successfully, select **System Overview** from the administration interface navigation bar and verify that all services have a **Responding** status in *green*. Also, select **Logs** from the navigation bar to verify that there are no errors.
- 28 Proceed to the *Basic Setup* chapter in the *Configuration Guide* for further instructions.

Installation Overview

The Installation overview provides summary information about the FAST InStream installation. It consists of three parts: Status, Service view and Install profile. These screens can be accessed at any time during the installation.

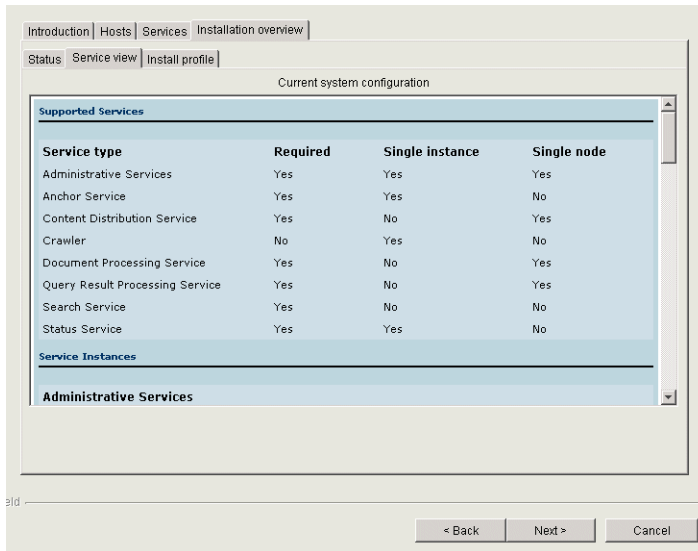
Status

Status provides information pertaining to the current configuration. This portion of the Installation overview provides configuration information you need to in order to complete the FAST InStream installation. It will, for example, display a message if any required services are missing or have an invalid configuration, or display a warning message if you have configured a host but not allocated any services to it.



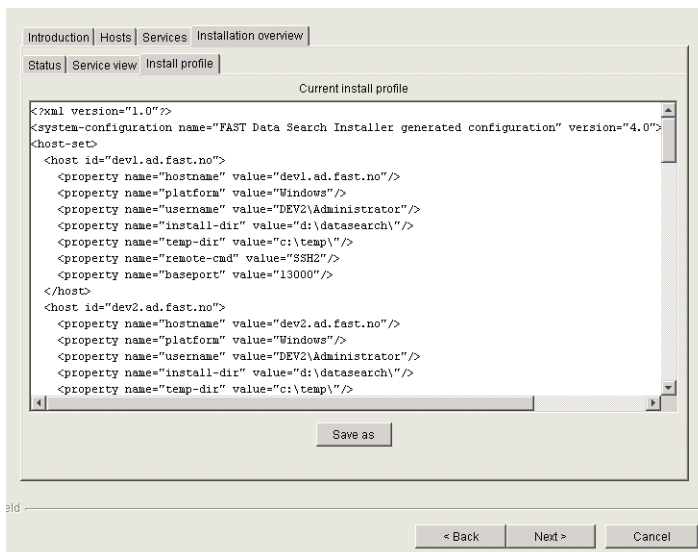
Service View

This section of the overview provides a summary of the Services including service type.



InstallProfile

This section of the Installer builds an installation profile XML file named `InstallProfile.xml`. It is recommended that you save this file to be used if you want to install a similar installation at another time.



Chapter 7

Verifying Configuration

If you want to verify that the node configuration information you set up during installation is accurate, you can do so via the FAST InStream System Overview and System Management selections on the navigation bar.

Verifying Component Configuration

Select **System Overview** on the navigation bar and the System Overview screen is displayed. This screen provides information such as the number of Node Controllers. Host listings for the Modules are also listed with the configured node names.

Verifying Node Configuration

Select **System Management** on the navigation bar and the System Management screen is displayed. Note that the number of Node Controllers registered with the Config Server are listed. All hosts configured at installation are also listed. Click on a specific host to obtain an extended list of system management information.

Verifying Search Engines

Select **Matching Engines** on the navigation bar and the Matching Engines screen is displayed. The primary host is listed as the search column. If there are multiple columns, all backup hosts will be listed below the primary node.

Chapter 8

Uninstalling FAST InStream

This chapter describes the steps to uninstall FAST InStream from UNIX and Windows platforms.

Note! During uninstallation, while the FAST InStream installation is being deleted, you may be asked whether or not you want to remove several files. These are files that have been modified since FAST InStream was installed. This happens as a normal part of the operation of FAST InStream. You can safely choose *"Yes to all"*, unless you have made manual changes that you do not want to delete.

UNIX Environment

Use this procedure to uninstall FAST InStream from the server. All files will be removed so make sure that you have saved your license file, and any file or web collections that you want to save.

- 1 Log on to the server to access a command line prompt.
- 2 The uninstaller is located in the `_uninst` subdirectory of where FAST InStream was installed. This will uninstall FAST InStream from all hosts included in the original installation.

Windows Environment

- 1 Run the uninstall program. To do this:
From the Windows **Start Menu**, select **Control Panel ->Add/Remove Programs**.
- 2 Select and remove the program. This must be done for all hosts involved in the installation.

Appendix A

Installation Profile Example

This appendix provides an example of the `InstallProfile.xml` configuration file created in the Multi Node setup.

```
<?xml version="1.0"?>
<system-configuration name="FAST InStream Installer generated
configuration" version="4.x">

<host-set>
  <host id="dev1.ad.fast.no">
    <property name="hostname" value="dev1.ad.fast.no"/>
    <property name="platform" value="Windows"/>
    <property name="username" value="DEV2\Administrator"/>
    <property name="install-dir" value="d:\datasearch"/>
    <property name="temp-dir" value="c:\temp"/>
    <property name="remote-cmd" value="SSH2"/>
    <property name="baseport" value="13000"/>
  </host>

  <host id="dev2.ad.fast.no">
    <property name="hostname" value="dev2.ad.fast.no"/>
    <property name="platform" value="Windows"/>
    <property name="username" value="DEV2\Administrator"/>
    <property name="install-dir" value="d:\datasearch"/>
    <property name="temp-dir" value="c:\temp"/>
    <property name="remote-cmd" value="SSH2"/>
    <property name="baseport" value="13000"/>
  </host>

  <host id="dev3.ad.fast.no">
    <property name="hostname" value="dev3.ad.fast.no"/>
    <property name="platform" value="Windows"/>
    <property name="username" value="DEV2\Administrator"/>
    <property name="install-dir" value="d:\datasearch"/>
    <property name="temp-dir" value="c:\temp"/>
    <property name="remote-cmd" value="SSH2"/>
    <property name="baseport" value="13000"/>
  </host>
</system-configuration>
```

```
</host>
</host-set>

<administration-set>
  <configuration-service id="CS3" host-ref="dev1.ad.fast.no">
  </configuration-service>
  <log-service id="LGS3" host-ref="dev1.ad.fast.no">
  </log-service>
  <administration-gui id="ADM3" host-ref="dev1.ad.fast.no">
  </administration-gui>
  <vespa id="VSP3" host-ref="dev1.ad.fast.no">
  </vespa>
  <storage-service id="STOR3" host-ref="dev1.ad.fast.no" admin="root"
adminpassword="" user="root" userpassword="">
  </storage-service>
  <name-service id="NAME3" host-ref="dev1.ad.fast.no">
  </name-service>
</administration-set>

<data-source-set>
  <crawler id="CR5" host-ref="dev3.ad.fast.no">
    <property name="organization" value="My Company"/>
    <property name="admin-email" value="administrator@example.com"/>
  </crawler>
</data-source-set>

<content-distributor-set>
  <content-distributor id="CD3" host-ref="dev1.ad.fast.no"/>
</content-distributor-set>

<search-engine-set>
  <search-engine id="RTS16" host-ref="dev2.ad.fast.no">
    <property name="search" value="true"/>
    <property name="index" value="true"/>
  </search-engine>
</search-engine-set>

<document-processor-set>
  <document-processor id="DP3" host-ref="dev1.ad.fast.no"/>
</document-processor-set>

<query-result-processor-set>
  <query-result-processor id="QRP5" host-ref="dev2.ad.fast.no">
    <property name="default-language" value="en"/>
    <property name="languages" value="en"/>
  </query-result-processor>
</query-result-processor-set>

<anchor-service>
  <anchor-server id="anch3" host-ref="dev1.ad.fast.no">
```

```
    <property name="dispatcher" value="true"/>
  </anchor-server>
</anchor-service>

<status-service>
  <status-server id="STATUS3" host-ref="dev1.ad.fast.no">
  </status-server>
</status-service>

<license-services>
  <license-server id="LIC1" host-ref="dev1.ad.fast.no">
  </license-server>
</license-services>

<search-engine-cluster-set>
  <search-engine-cluster id="webcluster">
    <property name="use-memsearch" value="false"/>
    <property name="index-profile-type" value="standard"/>
    <search-engine-column id="col0">
      <search-engine id-ref="RTS16"/>
    </search-engine-column>
    <query-result-processors>
      <query-result-processor id-ref="QRP5"/>
    </query-result-processors>
  </search-engine-cluster>
</search-engine-cluster-set>
</system-configuration>
```

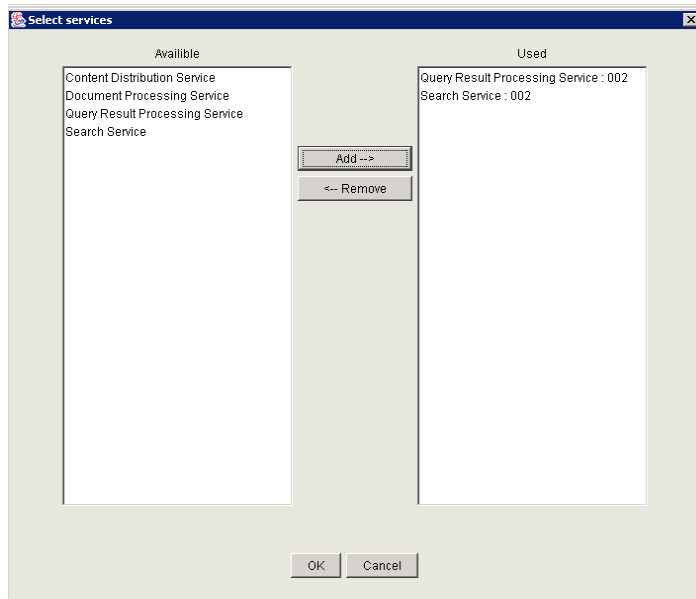

Appendix B

Adding Search Services

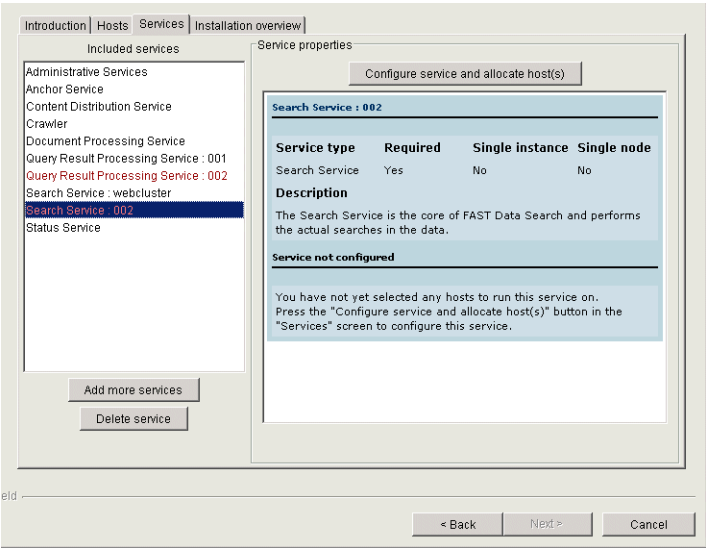
Search Service is provided by a Search Engine Cluster, which consists of a set of search engine rows and columns. This appendix provides some notes for adding more Search Services via the Installer.

Additional hosts (dev4, dev5, ...dev9) have been added to the configuration. The procedure in this appendix continues from the Services screen described in Chapter 6 *Installing FAST InStream in a Multiple Node Environment*, section *Allocating Required Services to host3*. To add a Search Service:

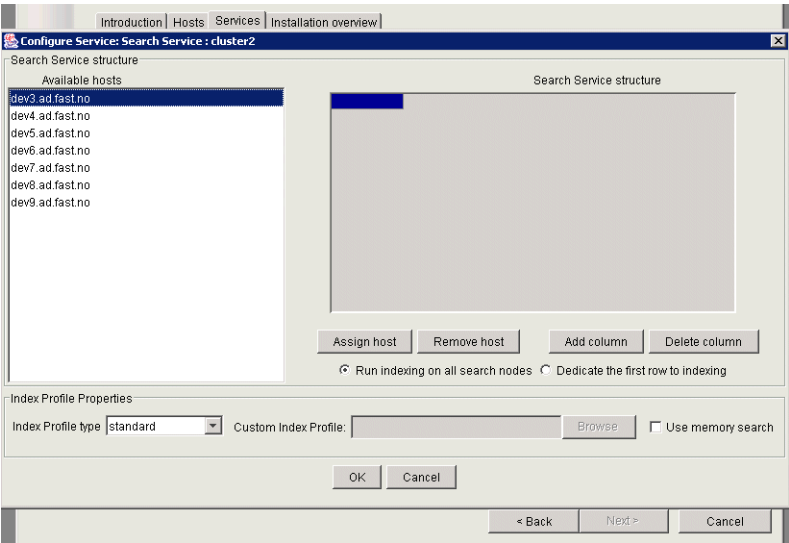
- 1 Click **Add more services** and select a **Query Result Processing Service** and a **Search Service**. Click **Add** to use the new services. Click **OK**.



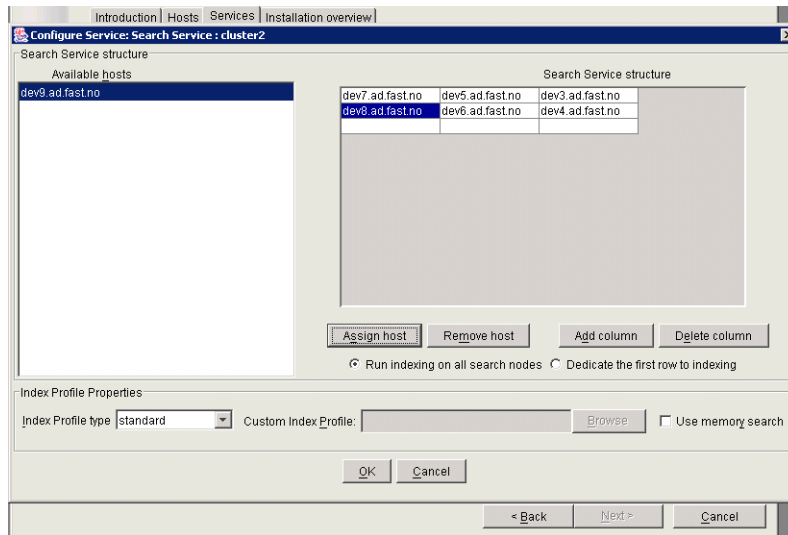
- 2 The two new services have been added to the **Included services** list as **Search Service:002**.



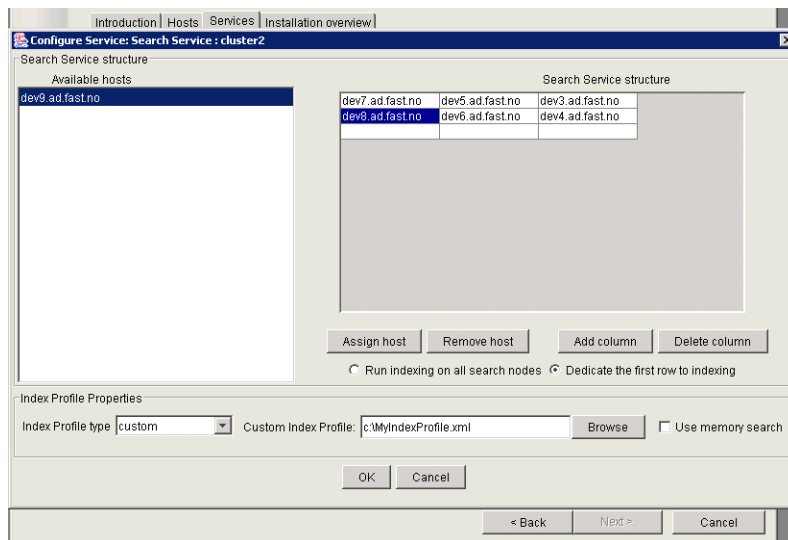
- 3 The **Search Service** is selected and named *cluster2*. The screen displays the unconfigured **Search Service**.



- 4 Six of the available hosts have been added to the **Search Service**, in 3 columns and 2 rows:

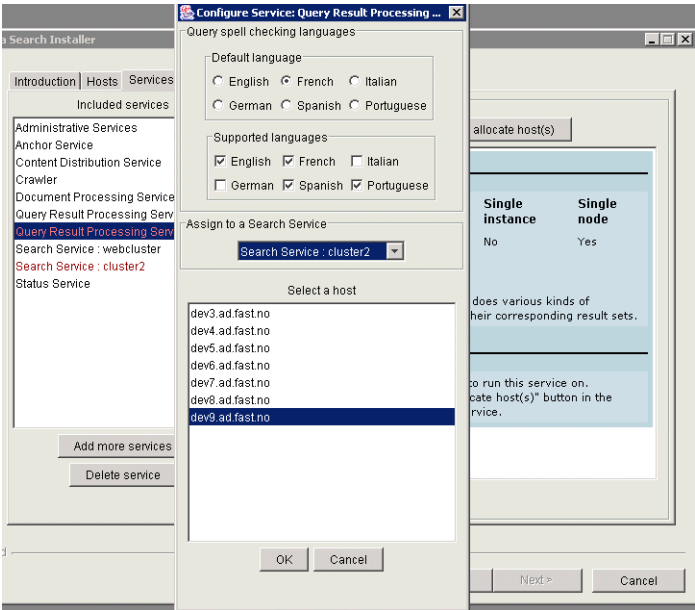


- 5 Some other options for a **Search Service** have been selected:
- The first row is selected to be a dedicated indexing row (as opposed to running both indexing and search on all hosts).
 - The indexing profile type has been changed to *custom* and the user has selected to use an index profile named *c:\MyIndexProfile.xml*.

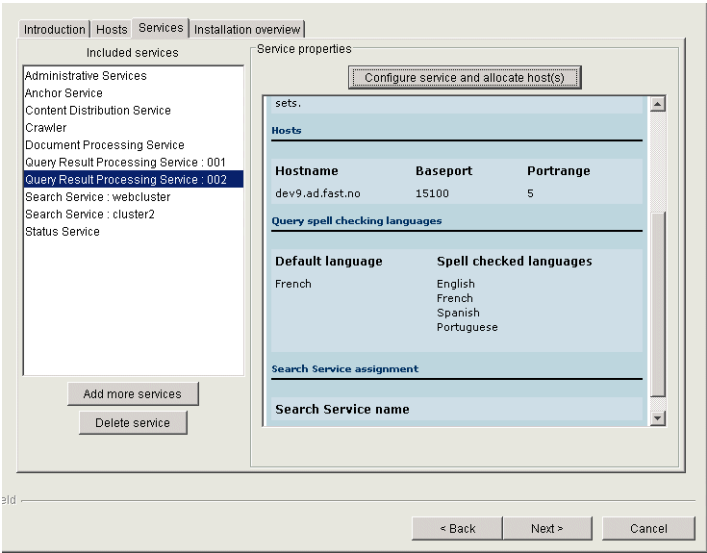


- 6 The newly added **Query Result Processing Service** is configured to use French as the default query-spell-checking language and supports English, French, Spanish and

Portuguese. It is assigned to the **Search Service** named *cluster2* and is assigned to run on *dev9.ad.fast.no*.



7 The second **Query Result Processing Service** has been configured.



Appendix C

License Manager

The license manager within FAST InStream is based on FLEXlm licensing software provided by Macrovision.

License File in a Distributed Configuration

In most cases FAST InStream is running as a distributed solution on several machines.

In such a distributed configuration the license manager uses the master license file located on the host where the license manager is running. It is this master license file that must be updated when upgrading your FAST InStream license.

The license manager host is normally the same as the host where the FAST Configuration Server is running.

During the installation process, a copy of the master license file is installed on each node in the FAST InStream. The first lines in this license file copy tell the processes on this node, on which node in the system the license manager is running. This way, the processes know where to send license requests.

Note!	The master license file is connected to a license manager running on a specific machine. The host-id of this machine is input to the license generating process. Moving the license manager to another machine will invalidate the license. If you want to move the license manager, you need a new master license file with a host-id reflecting the new location. In addition, you need to edit the local license file copies to point to the new location.
--------------	---

FLEXlm Usage Logging

The initialization and usage of the different counted license features is written to the log file *\$FASTSEARCH/var/log/lmgrd.scrap* (UNIX) or *%FASTSEARCH%\var\log\lmgrd.scrap* (Windows), with *\$FASTSEARCH* and *%FASTSEARCH%* being environment variables set to the directory where FAST InStream is installed. At the same time, any failures with performing license checkouts of FAST InStream features not included in the license file are written to the default log file that can be viewed in the FAST InStream Administrator Interface.

FLEXlm Host-ID

The FLEXlm host-id is a unique identifier for a machine to separate it from other machines. To obtain the FLEXlm hostid, navigate to the *\$FASTSEARCH/bin* (UNIX) or *%FASTSEARCH%\bin* (Windows) directory and enter the command `lmhostid`. The host id will be displayed as in the example below:

```
$ ./lmhostid
lmhostid - Copyright (C) 1989-2001 Macrovision Corporation
The FLEXlm host ID of this machine is "000102dffcd1"
```

License File

The license file is called *fastsearch.lic* and is located in *\$FASTSEARCH/etc* (UNIX) or *%FASTSEARCH%\etc* (Windows). It contains the following information:

SERVER line

This line specifies the machine on which the license manager is running, the FLEXlm host-id of this machine, and optionally the port number.

VENDOR line

This line specifies the name of the vendor daemon, which is `FASTSRCH`. It also includes the path to the vendor daemon.

USE SERVER line

This line redirects all license processing to the license manager.

INCREMENT lines

The license file contains several INCREMENT lines, one for each capability that is enabled. Each increment line specifies the following information (Table C-1):

Table C-1 INCREMENT lines

INCREMENT line	Description
<feature>	The licensed capability, such as FastDataSearchCrawler.
FASTSRCH	The vendor daemon name.
<version number>	The version number.
<expiry date>	The expiry date for the license. This element can have the value <i>permanent</i> , or <i>dd-mmm-yyyy</i> for time delimited licenses.
<count>	The number of licenses that are enabled for this feature.
NOTICE	A text that is connected to this license.
SIGN=<signature>	The signature ensures the validity of the license. It is a calculated value. If this information is changed, the license will be invalid.

Licensed Features

The following features of FAST InStream require explicit licensing:

Table C-2 FAST InStream Features Requiring Explicit Licensing

Feature	Feature Name in License File
Business Manager's Control Panel. This component enables customized rank tuning for documents and documents per query.	FastRankTuningAPI
Language Specific Advanced Linguistics.	FastDataSearchLing<2-character language code>
Note! Your FAST InStream license will normally include support for a subset of languages. Additional languages may be purchased separately	
Source data volume licensing defines limits for how much content that can be indexed in one single FAST InStream system.	FastDataSearchMaxIndexGB
Query per second capacity licensing defines the maximum peak query load that can be served by a single FAST InStream system	FastDataSearchMaxQPS

FLEXLM Reference Information

For detailed information regarding FLEXlm refer to the *FLEXlm User Guide*, which is available from <http://www.macrovision.com/support>.

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