

# SUSE Intermediate Troubleshooting: Support Advisor Technology Lab

SUS19

**Novell Training Services**

[www.novell.com](http://www.novell.com)

ATT LIVE 2012 LAS VEGAS

**Novell**<sup>®</sup>

---

## Legal Notices

Novell, Inc., makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc., makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. See the [Novell International Trade Services Web page \(http://www.novell.com/info/exports/\)](http://www.novell.com/info/exports/) for more information on exporting Novell software. Novell assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2012 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

Novell, Inc., has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed on the [Novell Legal Patents Web page \(http://www.novell.com/company/legal/patents/\)](http://www.novell.com/company/legal/patents/) and one or more additional patents or pending patent applications in the U.S. and in other countries.

Novell, Inc.  
404 Wyman Street, Suite 500  
Waltham, MA 02451  
U.S.A.  
[www.novell.com](http://www.novell.com)

**Online Documentation:** To access the latest online documentation for this and other Novell products, see the [Novell Documentation Web page \(http://www.novell.com/documentation\)](http://www.novell.com/documentation).

## Novell Trademarks

For Novell trademarks, see the [Novell Trademark and Service Mark list \(http://www.novell.com/company/legal/trademarks/tmlist.html\)](http://www.novell.com/company/legal/trademarks/tmlist.html).

## Third-Party Materials

All third-party trademarks are the property of their respective owners.

---

# Contents

<b>Section 1</b>	<b>Installation and Configuration.....</b>	<b>5</b>
<b>Exercise 1.1</b>	<b>Install and Configure SSAA.....</b>	<b>6</b>
	Task I: Open the Virtual Machine.....	6
	Task II: Installation and Configuration.....	6
<b>Section 2</b>	<b>Using the SUSE Support Advisor Appliance.....</b>	<b>9</b>
<b>Exercise 2.1</b>	<b>Analyzing a Supportconfig Archive.....</b>	<b>10</b>
	Task I: Run a Supportconfig.....	10
	Task II: View the Report.....	10
<b>Exercise 2.2</b>	<b>Automating Supportconfig.....</b>	<b>12</b>
	Task I: Configure Cron.....	12
<b>Exercise 2.3</b>	<b>Processing Multiple Supportconfigs.....</b>	<b>13</b>
	Task I: Upload the Supportconfig Archives.....	13
	Task II: Monitor the Analysis Progress.....	13
<b>Section 3</b>	<b>Administration.....</b>	<b>15</b>
<b>Exercise 3.1</b>	<b>Adjusting Agent Threads.....</b>	<b>16</b>
	Task I: Add Additional Threads.....	16
	Task II: Remove Unnecessary Threads.....	16
<b>Exercise 3.2</b>	<b>Activating the Agent.....</b>	<b>18</b>
	Task I: Reset the Agent.....	18
<b>Exercise 3.3</b>	<b>Optimizing the Database.....</b>	<b>19</b>
	Task I: Optimize the Database.....	19

## List of Figures

Install/Restore.....	6
Instruction Screen.....	7
Web Interface Home Page.....	10
Operations Screen.....	14
Adding a Thread.....	16
Removing a Thread.....	17
db check.....	19

## Section 1 Installation and Configuration

Dedicated to installing and configuring the SUSE Support Advisor Appliance.

## 1.1 Install and Configure SSAA

In this exercise you will install and configure the SUSE Support Advisor Appliance.

### Objectives:

- Task I: Create the Virtual Machine
- Task II: Installation and Configuration

### Special Instructions and Notes:

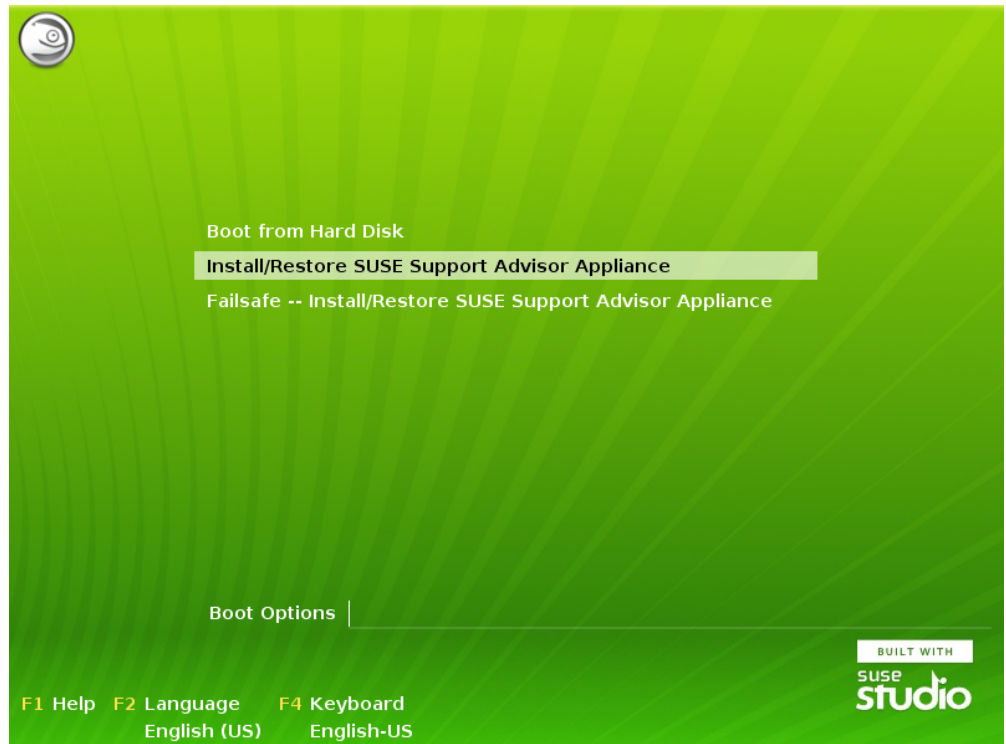
None

### Task I: Open the Virtual Machine

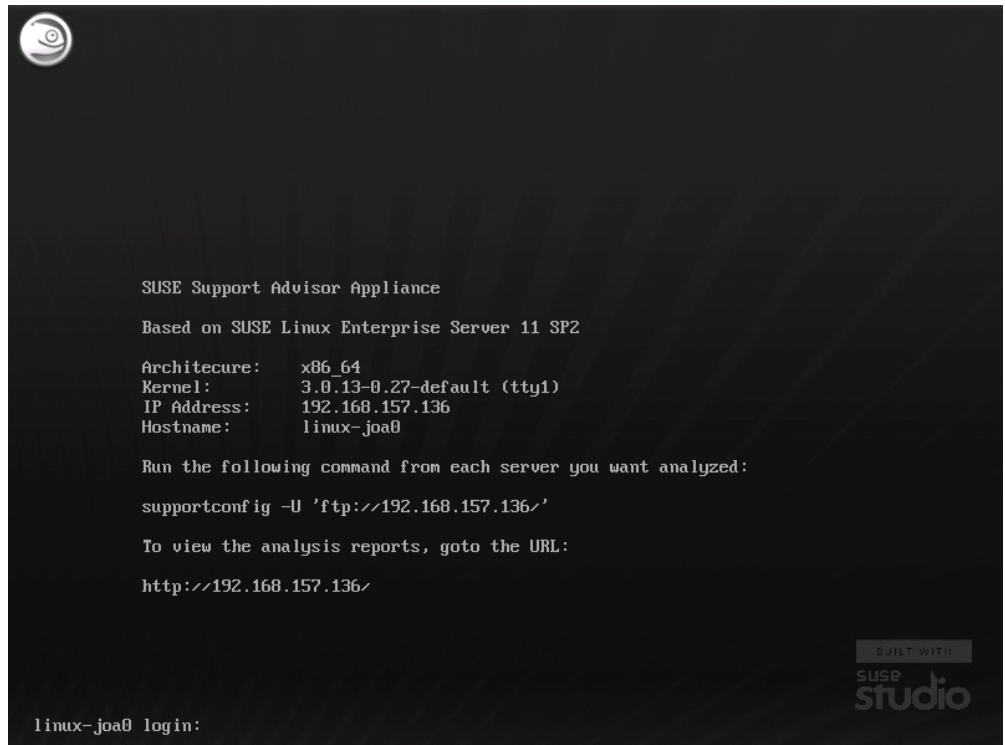
1. In VMware, click File, Open
2. Select `/opt/labs/vms/SSAA/SSAA.vmx`

### Task II: Installation and Configuration

1. Power on the virtual machine
2. Select Install/Restore SUSE Support Advisor Appliance



3. Select Yes for “Destroying ALL data on /dev/sda, continue?”
4. Accept the SLES11 SP2 End-user License Agreement.
5. Review the installation instructions along with the SSAA license agreement.
6. Accept the License Agreement.
7. Select your Language, click Next.
8. Select your Keyboard Configuration, click Next.
9. Select Next for the default Hostname and Domain Name.
10. Select Next for DHCP network configuration.
11. Select you Time Zone, click Next.
12. Login as root, password linux.
13. If you want to configure NTP on your own servers, type `yast ntp-client`. However, we will not configure NTP for this exercise.
14. Type **reboot**.
15. An updated /etc/issue file displays the instructions for uploading supportconfig archives and review reports.



```
SUSE Support Advisor Appliance
Based on SUSE Linux Enterprise Server 11 SP2

Architecture: x86_64
Kernel: 3.0.13-0.27-default (tty1)
IP Address: 192.168.157.136
Hostname: linux-joa0

Run the following command from each server you want analyzed:

supportconfig -U 'ftp://192.168.157.136/'

To view the analysis reports, goto the URL:

http://192.168.157.136/

linux-joa0 login:
```

The screenshot shows a terminal window with a dark background. At the top left is the SUSE logo. The text in the terminal provides system details for the SUSE Support Advisor Appliance, including architecture, kernel, IP address, and hostname. It also includes instructions for running the supportconfig command and viewing analysis reports. In the bottom right corner, there is a logo for 'BUILT WITH SUSE studio'.

---

The SSAA preload ISO is bundled with all necessary services. They are all operational and ready to start analyzing supportconfig archives.

---

**(End of Exercise)**



## Section 2 Using the SUSE Support Advisor Appliance

Exercises teaching how to submit supportconfig archives and read their analysis reports.

## 2.1 Analyzing a Supportconfig Archive

In this exercise you run a supportconfig with options to upload the archive to the SSAA server. Once it is analyzed, you can view the report using the SSAA web interface.

### Objectives:

Task I: Run a Supportconfig

Task II: View the Report

### Special Instructions and Notes:

None

### Task I: Run a Supportconfig

You will be running a supportconfig on the server you want to analyze. In this case the host machine.

1. Write down the supportconfig command displayed on your SSAA login screen.
2. Login as root on your host machine.
3. Run supportconfig -U '[ftp://ssaa\\_ip\\_address/](ftp://ssaa_ip_address/)'
4. Wait for it to complete before attempting to view the report on your SSAA server.

### Task II: View the Report

1. Open a web browser on your host machine.
2. Go to the URL specified on your SSAA login screen.
3. The landing page will be blank initially because there have been no archives analyzed yet.
4. Click on the “Operations” link.
  1. You can watch the progress of the archive being analyzed.
  2. Once it is marked “Done”, you can return to the main landing page.
5. Click on the server name or report date on the SSAA home page to view the analysis report.

SUSE Support Advisor Appliance 10 Most Recent Reports					
[ Operations   Top 10, 25, 50, 100   Archive Details: Pending, Active, Done, Error ]					
Server Name	Report Date	Critical	Warning	Recommended	Success
sles11	2012-04-16 13:39:02	1	0	2	47

6. Read the analysis report as instruction in the lecture, creating your “related problem” and “proactive” action lists.

---

You learned how to run a supportconfig with the startup option needed to automatically upload the supportconfig archive to your SSAA server. The SSAA server then automatically analyzed the archive and posted the results in its mySQL database. You reviewed the analysis report using the SSAA web interface.

---

**(End of Exercise)**

## 2.2 Automating Supportconfig

In this exercise you will configure a cron that runs a supportconfig and uploads the archive to the SSAA server periodically.

### Objectives:

Task I: Configure Cron

### Special Instructions and Notes:

None

### Task I: Configure Cron

1. Login as root to your host machine.
2. Run `crontab -e`
3. Configure the cron to run supportconfig every twenty minutes for testing purposes. For example, if the your SSAA server's IP address is 192.168.157.10, you would add the following line. Look at your SSAA server login screen to see your actual IP address.
  1. `*/20 * * * * /sbin/supportconfig -QU 'ftp://192.168.157.10/'`
4. **NOTE:** You would probably run a supportconfig once per month for regular maintenance and health checks. Go ahead and create a monthly cron that runs supportconfig as well.
  1. Create `/etc/cron.monthly/supportconfig-maint` with two lines.
    1. `#!/bin/bash`
    2. `/sbin/supportconfig -QU 'ftp://ssaa_ip_address/'`
  2. Run `chmod 755 /etc/cron.monthly/supportconfig-maint`
  3. Run your `supportconfig-maint` script to test that it's working properly.

---

You can configure supportconfig to run regularly on your servers and upload the archive to SSAA for analysis. This is a great way to check the health of the servers.

---

**(End of Exercise)**

## 2.3 Processing Multiple Supportconfigs

In this exercise you will analyze several supportconfigs simultaneously.

### Objectives:

Task I: Upload the Supportconfig Archives

Task II: Monitor the Analysis Progress

### Special Instructions and Notes:

None

### Task I: Upload the Supportconfig Archives

Uploading several supportconfig archives simulates several SUSE servers uploading their supportconfig archives concurrently.

1. Write down your SSAA IP address as displayed on its login screen. For this example, we will use 192.168.157.10, but you will need to use your own SSAA IP address.
2. Login to a terminal on your host machine.
3. Upload all the nts\_\*tbz supportconfig archives to your SSAA server. The following is a quick command to upload all the files.
  1. `cd /opt/labs/archives`
  2. `for i in nts_*tbz; do ftp -u "192.168.157.10:/$i" $i; done`

### Task II: Monitor the Analysis Progress

1. Open a web browser on your host machine.
2. Go to the URL displayed on your SSAA server login screen.
3. For example, <http://192.168.157.10/>
4. Click on the Operations link to view the current progress.

## SUSE Support Advisor Appliance Operations

### Agent Summary

Agent State	Event Date	Agent Message	Active Threads	Thread Management	CPU Current	Available Patterns
Active	2012-04-16 15:35:02	Worker Assigned	4 / 4	Add + Remove -	12% / 80%	485

### Agent Worker Threads

Worker ID	Assigned Archive ID	Home Path
1	5	/var/opt/scdiag/worker1
2	6	/var/opt/scdiag/worker2
3	7	/var/opt/scdiag/worker3
4	8	/var/opt/scdiag/worker4

### Archive Summary

Total Archives		Results	
10		198	
Pending	Active	Done	Error
2	4	4	0

SSAA can analyze multiple supportconfig archives simultaneously. By default, SSAA has four agent threads to analyze four archives concurrently.

**(End of Exercise)**

## Section 3 Administration

Exercises that teach how to administer and maintain SSAA.

## 3.1 Adjusting Agent Threads

In this exercise you adjust the number of agent worker threads that analyze supportconfig archives.

### Objectives:

Task I: Add Additional Threads

Task II: Remove Unnecessary Threads

### Special Instructions and Notes:

None

### Task I: Add Additional Threads

If you have a lot of servers uploading supportconfig archives, you may want to adjust SSAA to handle more archives concurrently.

1. Open a browser on your host machine.
2. Go to the URL specified on your SSAA login screen (ie <http://192.168.157.10/>)
3. Click on the Operations link
4. Click the “Add +” link under Thread Management.

SUSE Support Advisor Appliance Operations						
Agent Summary						
Agent State	Event Date	Agent Message	Active Threads	Thread Management	CPUCurrent	Available Patterns
Active	2012-04-17 09:13:02	Updated CPUCurrent	0 / 4	Add + Remove -	11% / 80%	485

### Task II: Remove Unnecessary Threads

If you have a machine with minimal resources, you may want to reduce the number of threads. A minimum of two agent worker threads is recommended.

1. Open a browser on your host machine.
2. Go to the URL specified on your SSAA login screen (ie <http://192.168.157.10/>)
3. Click on the Operations link
4. Click the “Remove -” link under Thread Management.



## SUSE Support Advisor Appliance Operations

### Agent Summary

Agent State	Event Date	Agent Message	Active Threads	Thread Management	CPU Current	Available Patterns
Active	2012-04-17 09:13:02	Updated CPU Current	0 / 4	Add + Remove -	11% / 80%	485

Adding and removing SSAA threads is easy when using the web interface. The number of agent worker threads lets you control how many supportconfig archives can be analyzed simultaneously.

**(End of Exercise)**

## 3.2 Activating the Agent

In this exercise you will activate the agent and reset its worker threads.

### Objectives:

Task I: Reset the Agent

### Special Instructions and Notes:

None

### Task I: Reset the Agent

1. Login to the SSAA server as root, password is linux.
2. Run `db` to display the status of the database.
3. Check the number of **ArchiveAssigned** values in the **AgentWorkers** table. They should be NULL if no supportconfig archive is being processed, otherwise there will be a number assigned.
4. Run `ps aux | grep sdagent | grep -v grep`
5. You should have the same number of **ArchiveAssigned** as you do running **sdagent** processes.
  1. If you have **ArchiveAssigned** values, but no running **sdagent** processes, you will need to reset the agent.
6. Run `db reset` to reset the agent.

---

If an agent worker thread fails to complete or update the database with its exit status, the database will be left in a incomplete state. This could lead to using up all the worker threads. If this happens, you can reset the database and prepare the agent to work again using the `db` command.

**WARNING:** Be careful not to reset the agent if there are valid active agent threads.

The SSAA broker will not assign new agents if the number of active agent threads has reached the maximum number threads allowed, or the CPU utilization meets or exceeds the maximum CPU utilization allowed. Resetting the agent will also clear these values.

**NOTE:** You do not need to reset the agent under normal operating conditions.

---

**(End of Exercise)**

## 3.3 Optimizing the Database

In this exercise you check, repair and optimize the mySQL database tables.

### Objectives:

Task I: Optimize the Database

### Special Instructions and Notes:

None

### Task I: Optimize the Database

The database is healthier when you optimize the tables periodically.

1. Login to the SSAA server as root, password is linux.
2. Run **db** to display the status of the database.
3. Run **db check** to check, automatically repair and optimize the SSAA mySQL database.

```
#####
# ServerDiagnostics Database Tool v0.3.10: Tue Apr 17 09:05:12 MDT 2012
#####

Checking Tables
ServerDiagnostics.AgentWorkers      OK
ServerDiagnostics.Agents            OK
ServerDiagnostics.Archives          OK
ServerDiagnostics.Results           OK

Automatically Repairing Tables
ServerDiagnostics.AgentWorkers      OK
ServerDiagnostics.Agents            OK
ServerDiagnostics.Archives          OK
ServerDiagnostics.Results           OK

Optimizing Tables
ServerDiagnostics.AgentWorkers      OK
ServerDiagnostics.Agents            OK
ServerDiagnostics.Archives          OK
ServerDiagnostics.Results           OK
```

---

Running a **db check** periodically keeps the mySQL database healthy.

---

**(End of Exercise)**

