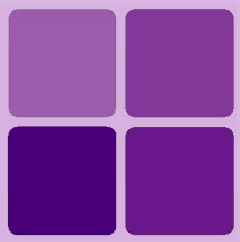

Intellicus Cluster and Load Balancing (Windows)

Intellicus Enterprise Reporting and BI Platform

intellicus
Enterprise Reporting and
Business Insights Platform

info@intellicus.com
www.intellicus.com

Dated: October 2014

Acknowledgements

Intellicus acknowledges using of third-party libraries to extend support to the functionalities that they provide.

For details, visit: http://www.intellicus.com/acknowledgements.htm

Contents

Introduction

You need to implement Clustering and Load Balancing in the following situations:

- When Intellicus server has to handle significantly heavy load
- To create server failure and recovery mechanism

Clustering

This is a mechanism through which multiple instances of Intellicus server are run and maintained on multiple systems. All these systems form what is known as a Cluster.

Load Balancing

This is a process of balancing load among servers in a cluster. A component known as Load Balancer takes care of this activity.

How it works

Multiple machines are networked to form a cluster. Cluster Report Server is installed and run on all the machines. Load Balancers are installed on one or multiple Machines of network. Load Balancer keeps track of load that each of the cluster report server is having.

Report client first communicates with the Load Balancer. Load Balancer keeps track of loads on each of the cluster server instances. So, based on the Load Balancing algorithms it finds the appropriate cluster server on which request should be forwarded, then it sends the IP of the cluster server to the client. Report client sends request to that cluster report server. This process is repeated for every client request.

This way, load is spread across multiple cluster report servers.

Installation and Configuration

Before going ahead with installation and configuration of load balancing and clustering, you need to:

- Install Intellicus.

Note:

Machine Sharability: This machine needs to be sharable for all machines running server instances.

Repository Database: HSQLDB is not used as repository when Intellicus runs in cluster environment.

- Decide the machines on which Load Balancers will be installed.
- Decide the machines on which Cluster Node (to run Intellicus server instance) will be installed.
- Make sure all the machines are on network.

Architecture

A Cluster with Shared Server and Nodes is depicted in the below diagram:

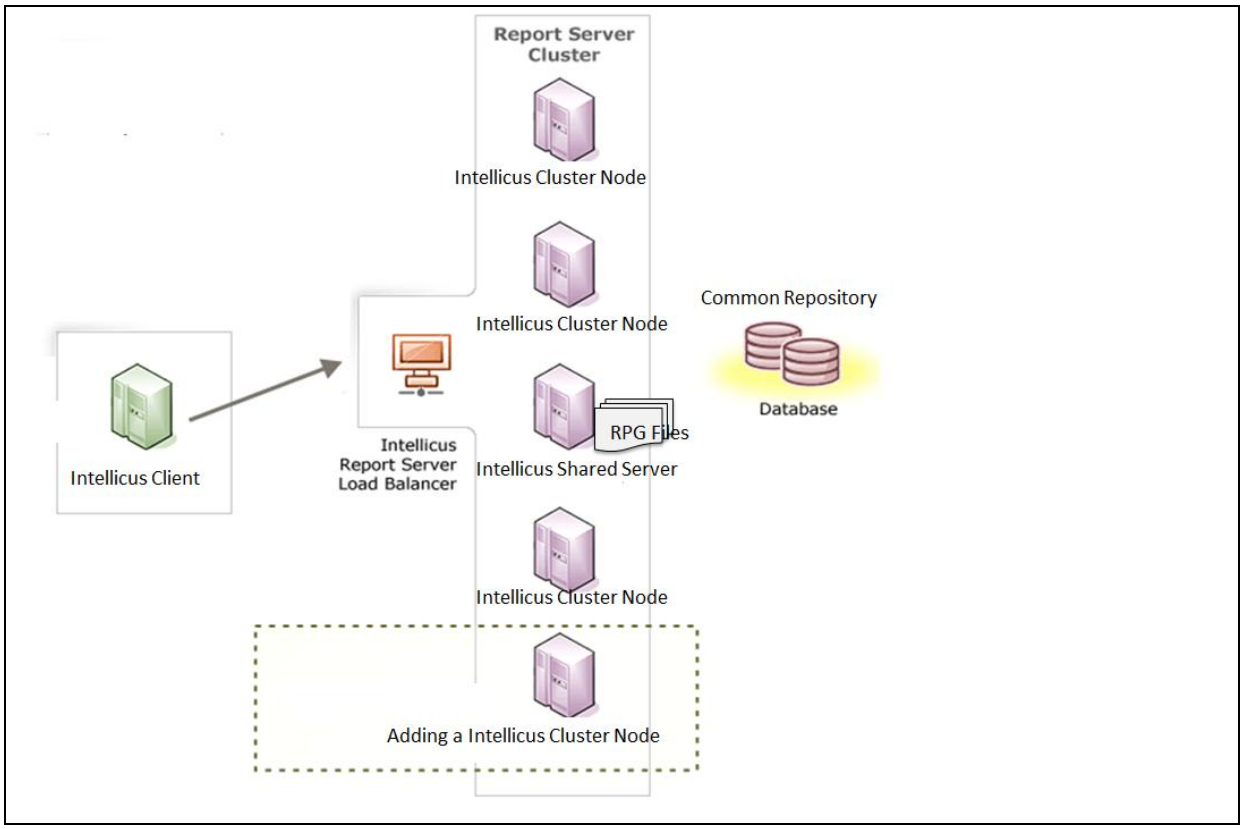

Figure 1: Architecture Diagram

Install Load Balancer

Setup of Load Balancer needs to be installed on each of the machine allocated to run Load Balancer.

A double-click on setup icon will launch the installer.

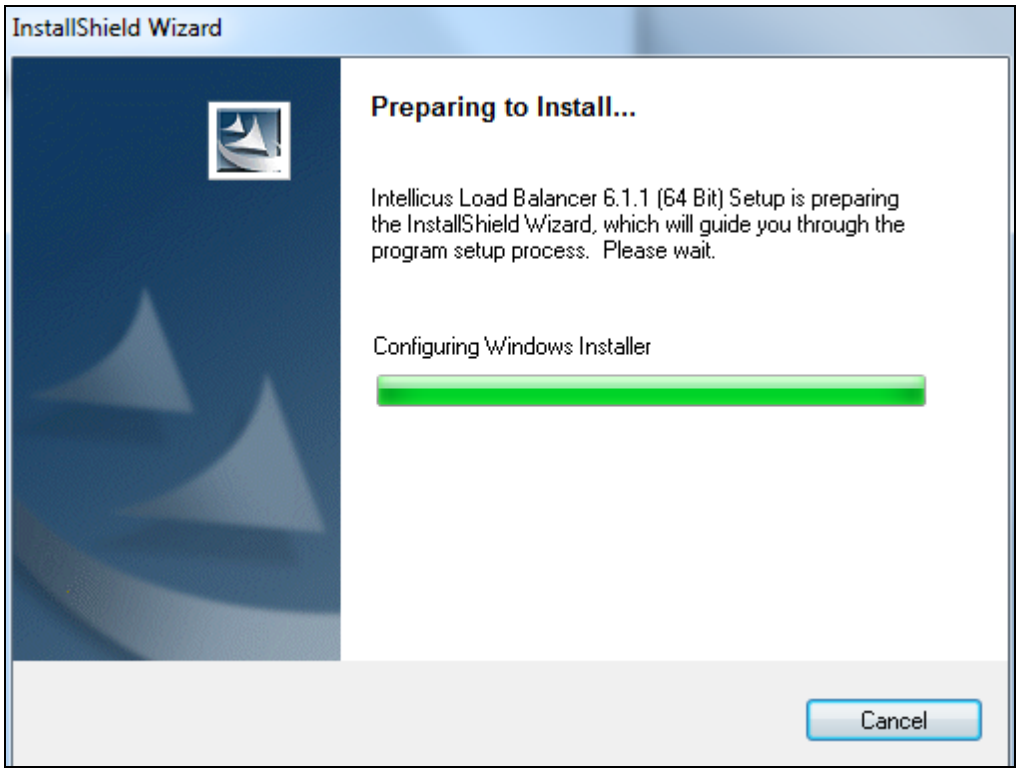

Figure 2: Launching installer

Note: Load Balancer 6.x is compatible with 7.x as well.

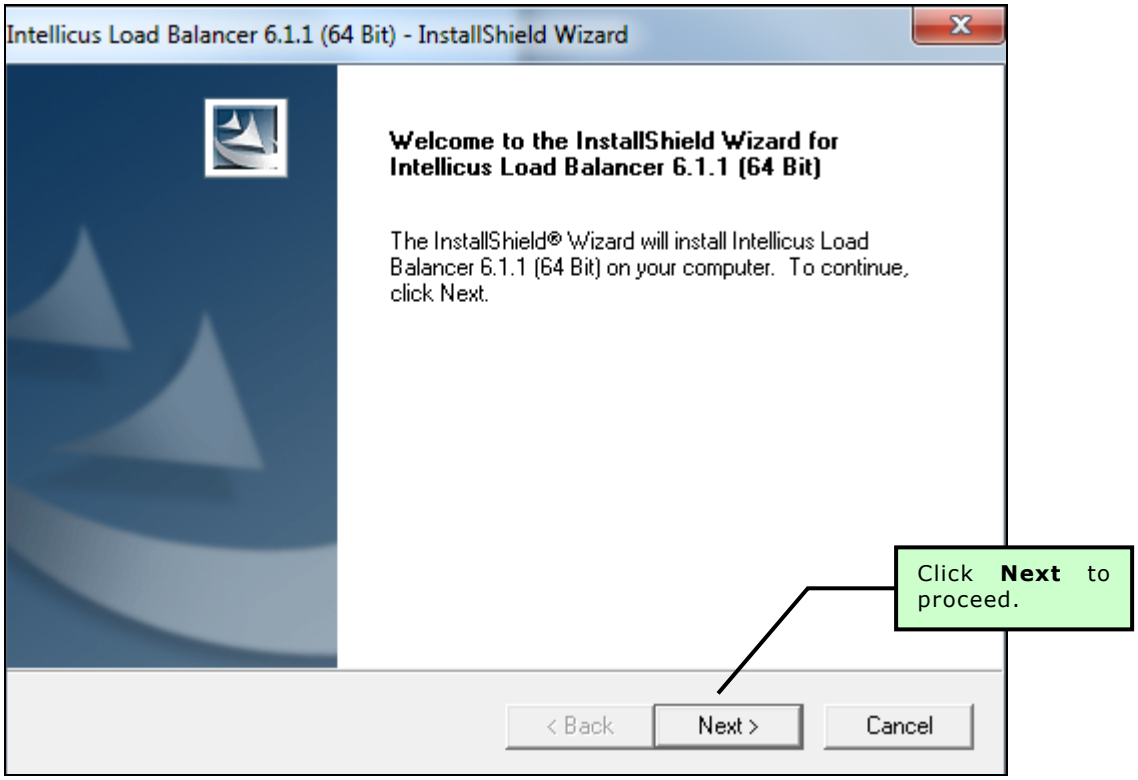

Figure 3: Ready to start

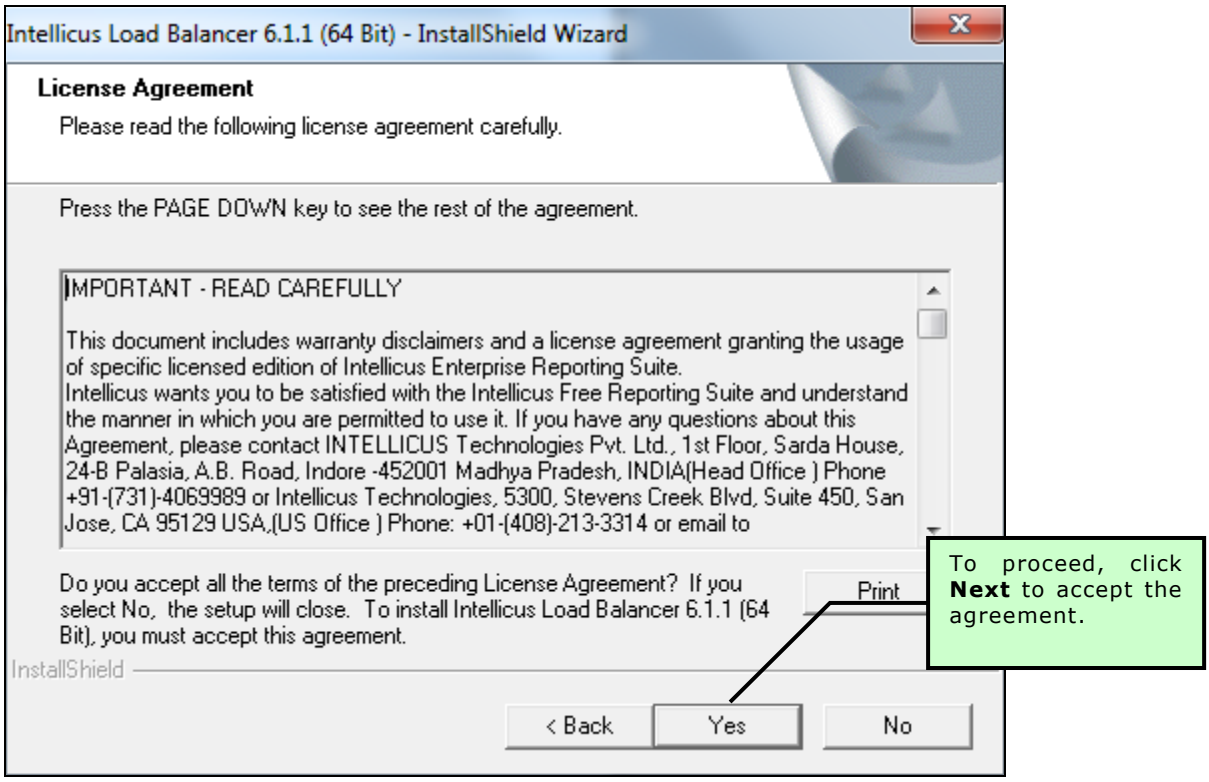

Figure 4: Accepting license agreement

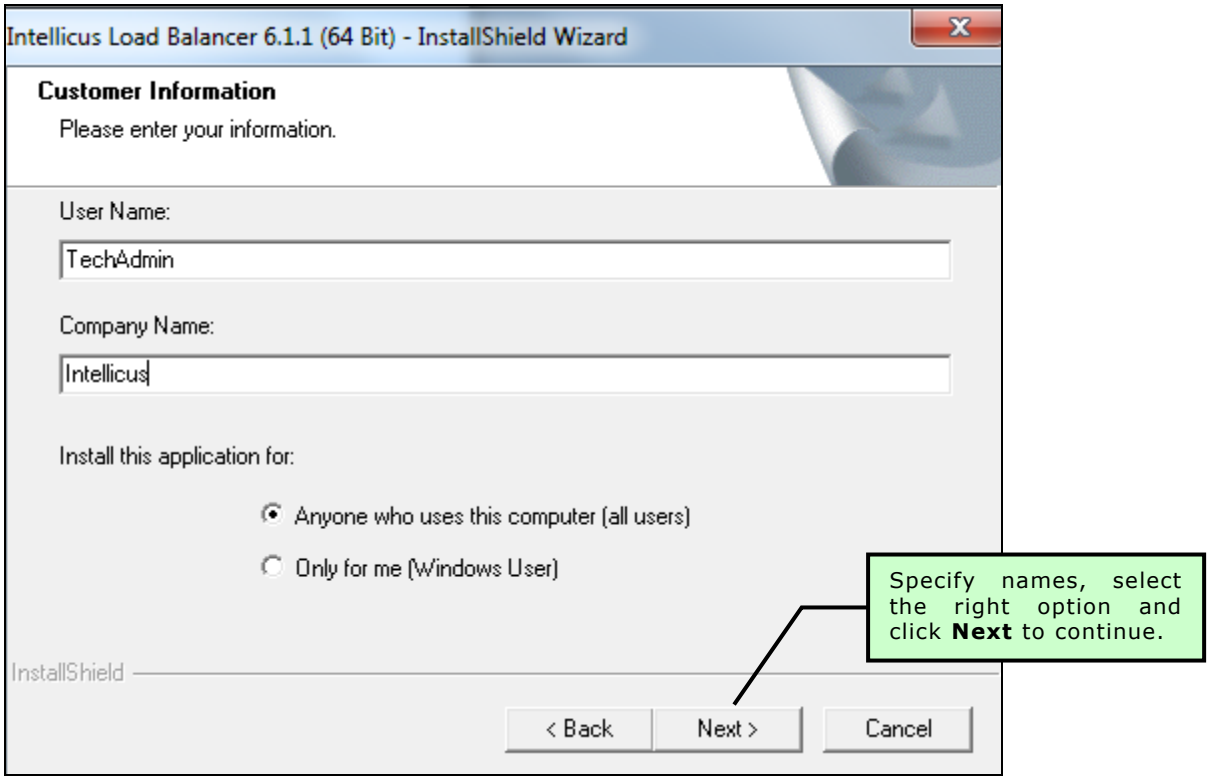

Figure 5: User Information

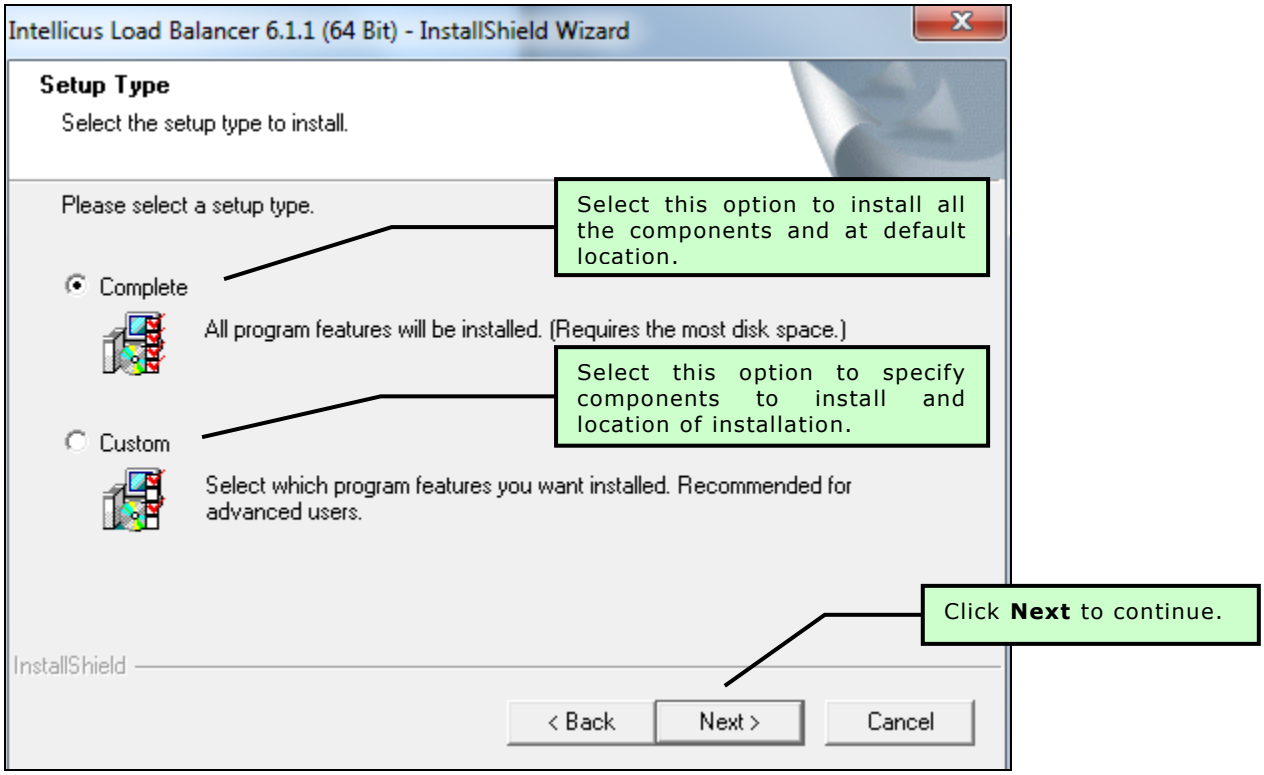

Figure 6: Decide setup type

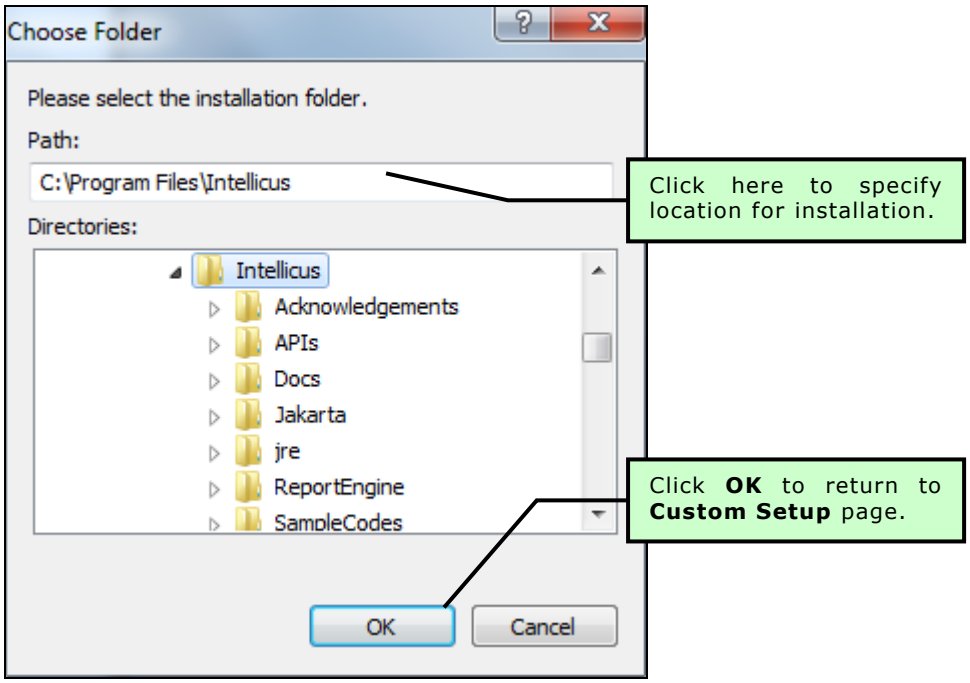

Figure 7: Custom setup: Specifying destination

Click **Next** to continue.

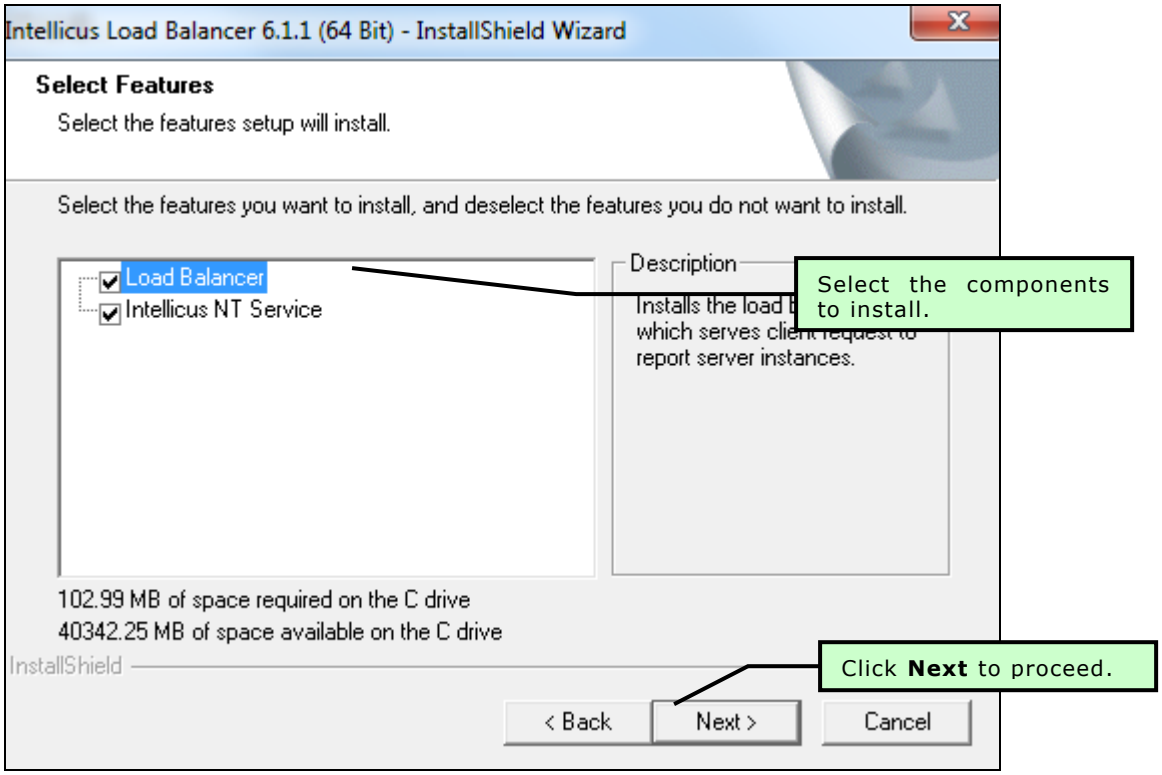

Figure 8: Custom setup > Select the components to install

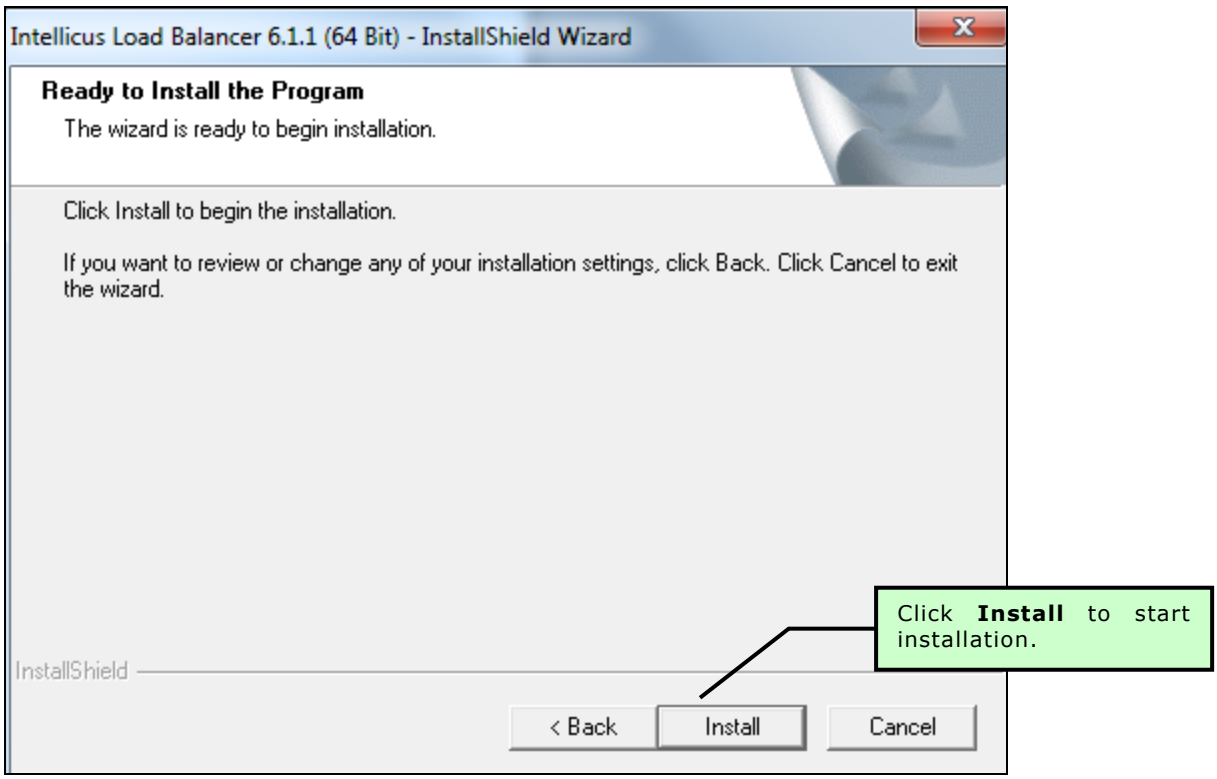

Figure 9: Ready to Install

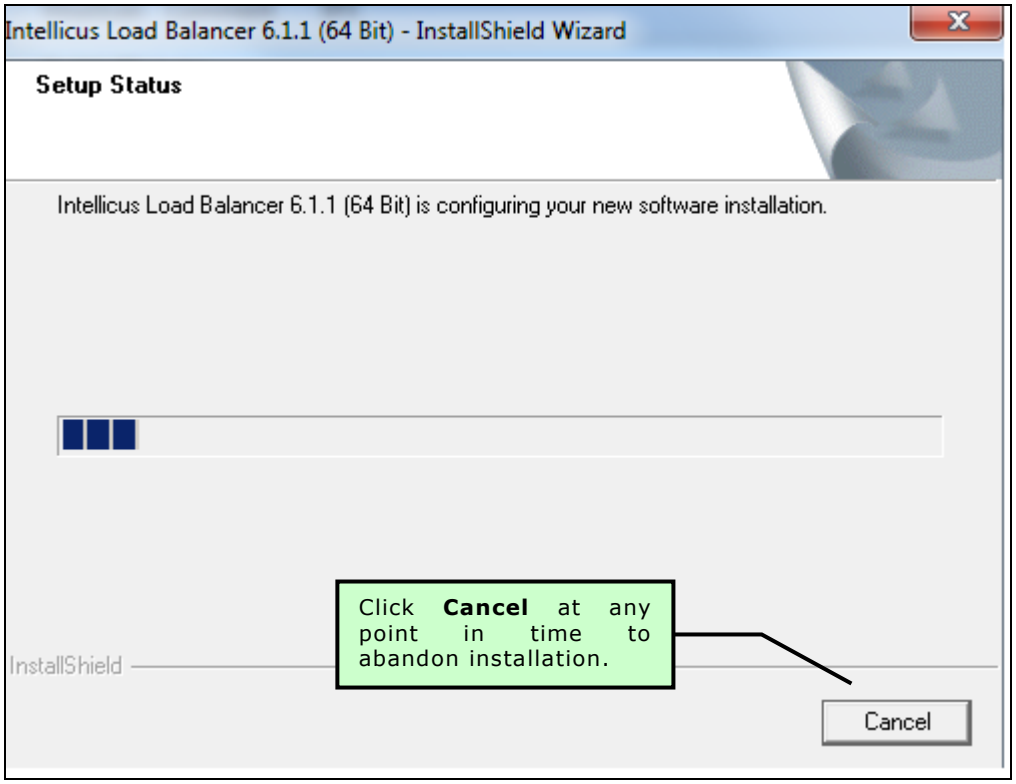

Figure 10: Installation in progress

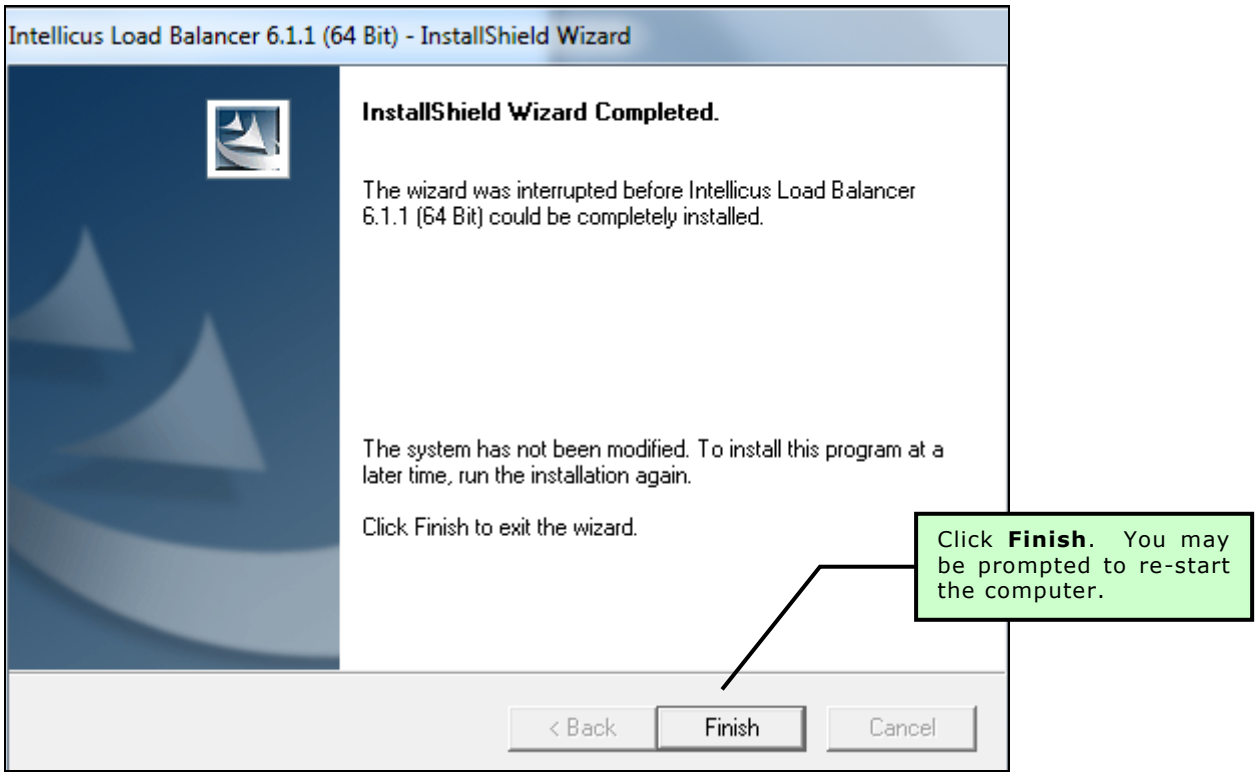

Figure 11: Installation complete

Adding Load Balancer Server to Intellicus Service

Adding a load balancer to the Service Manager helps the load balancer to start automatically when a windows machine boots up. Service Manager also helps in automatically re-starting a load balancer if it gets down un-expectedly.

Open Intellicus Service Manager Dialog from the Start menu:

Click Add ( ) button to add a new server:

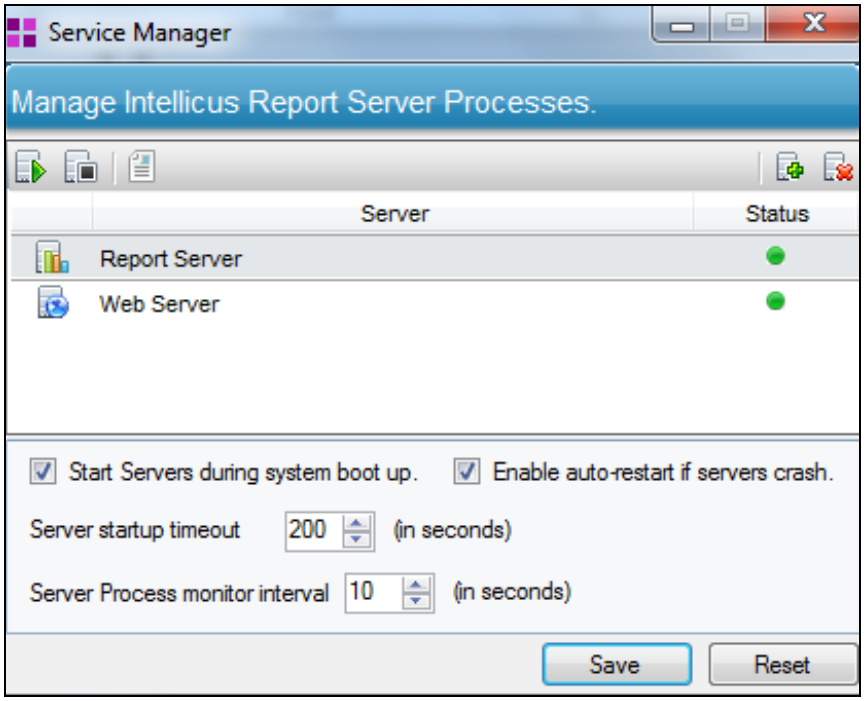

Figure 12: Service Manager

You need to provide the following information while adding a Load Balancer:

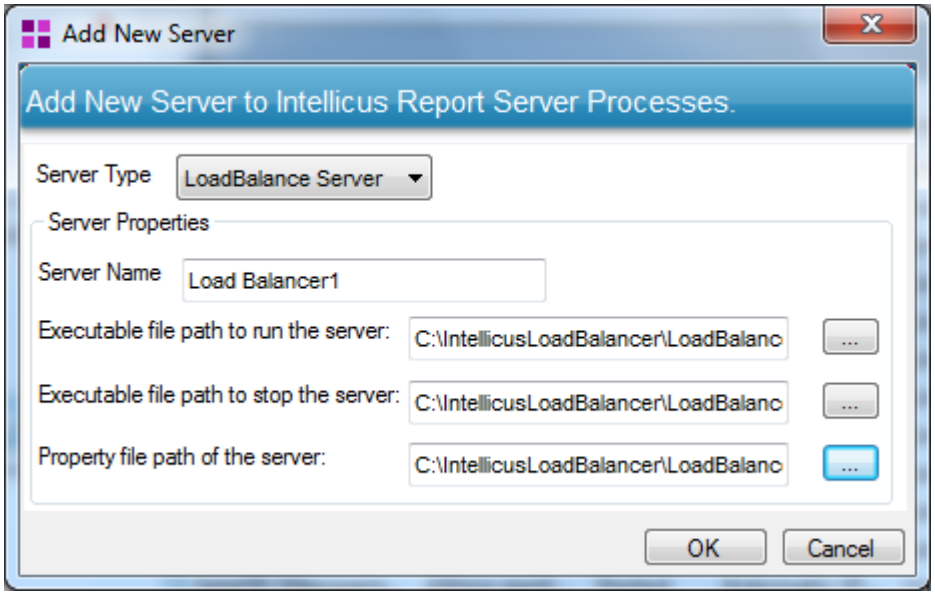

Figure 13: Service Manager: Add New Server (Load Balancer)

Load balancer properties for Service Manager Add dialog:

Property	Value	Comments
Server Type	Report Server Load Balance Server	Load Balance server = To add a Load balancer to this Service Manager
Server Name	Type in Name	A unique name for Service Manager to identify this Load Balancer
Executable file to run the Load Balancer	File path	File that the service will execute to startup the Load Balancer. <installPath>\IntellicusLoadBalancer\LoadBalancer\bin\runLB
Executable file path to stop the Load Balancer	File path	File that the service will execute to stop (shutdown) the Load Balancer. <installPath>\IntellicusLoadBalancer\LoadBalancer\bin\shutdownLB
Property file path of the Load Balancer	File Path	Property file to load during start of this load balancer <installPath>\IntellicusLoadBalancer\LoadBalancer\config\RegistryConfig.properties

Specify the information and click "OK".

To save the changes, click "Save" button on Service Manager Dialog.

Configure Load Balancer

In multiple Load Balancer setup, one of the Load Balancers will act as the primary load balancer. All other Load Balancers will act as secondary load balancers.

In the event of failure of the primary load balancer one of the secondary load balancers will take the charge of the primary one.

For all the load balancers, carry out the following configuration tasks:

- Specify Cluster Node and Load Balancer related details in RegistryInfo.xml file
- Setup port of the Load Balancer in RegistryConfig.properties file
- Configure report engine

Configurations in RegistryInfo.xml file

Load Balancer setup places file RegistryInfo.xml in \LoadBalancer\Config folder.

```
<REGISTRYINFO>
      <REGISTRIES>
            <REGISTRY IP="192.168.33.115" PORT="60001"/>
            <REGISTRY IP="192.168.33.115" PORT="60000"/>
      </REGISTRIES>
      <SERVERS>
            <SERVER IP="192.168.33.115" PORT="50000" TASK_PRIORITY="6" TASK_TYPE="ALL" WEIGHTAGE="30"/>
            <SERVER IP="192.168.33.115" PORT="50001" TASK_PRIORITY="4" TASK_TYPE="ALL" WEIGHTAGE="0"/>
            <SERVER IP="192.168.33.115" PORT="50002" TASK_PRIORITY="2" TASK_TYPE="ALL" WEIGHTAGE="30"/>
            <SERVER IP="192.168.33.115" PORT="50003" TASK_PRIORITY="0" TASK_TYPE="ALL" WEIGHTAGE="30"/>
      </SERVERS>
      <CONFIG SVR_PING_TIME="30" REG_PING_TIME="3" TASK_PRIORITY_TYPE="NONE" ALLOCATION_TYPE="ROUNDROBIN"
</REGISTRYINFO>
```

Figure 14: Snapshot of RegistryInfo.xml file

You need to specify the following information in this file:

- Specify details of all cluster nodes
- Specify details of this and other load balancers

Cluster Node related information

You need to specify the following information about all the cluster nodes in the cluster:

- **SERVER IP:** The IP address of the cluster node.
- **PORT:** The port at which cluster node will listen.
- **TASK PRIORITY:** Specify a positive integer between 1 and 6 both inclusive. Priority 1, 2 is for Low; 3, 4 is for Medium and 5, 6 is for High.
- **TASK TYPE:** Specify the option 'All'.

- **WEIGHTAGE:** Specify percentage of the load that this cluster node should take.

This information needs to be provided as an entry under SERVER tag. Example:

```
<SERVER IP="192.168.33.115" PORT="50003" TASK_PRIORITY="0"
TASK_TYPE="ALL" WEIGHTAGE="30"/>
```

Specify this information for all the cluster nodes.

Load Balancer related information

You need to specify IP and port of all the load balancers.

- **REGISTRY IP:** IP of the machine where Load Balancer is installed.
- **PORT:** Port at which that Load Balancer will listen.

This information needs to be provided as an entry in REGISTRIES tag. Example:

<REGISTRY IP="192.168.33.115" PORT="60001"/>

Configurations in RegistryConfig.properties file

Load Balancer setup places file RegistryConfig.properties in \LoadBalancer\Config folder.

Load Balancer reads value stored in REGISTRY_LISTENER_PORT property in RegistryConfig.properties file to know the listener port.

Example: REGISTRY_LISTENER_PORT=60000

Modify values of following properties

EMAIL_TO_ADDRESS

An alert through e-mail will be automatically be sent in error conditions like the server shuts down, it reaches not responding state, or goes out of memory. Specify the email ID where the mail should be sent.

EMAIL_FROM_ADDRESS

An alert through e-mail will be automatically be sent in error conditions like the server shuts down, it reaches not responding state, or goes out of memory. Specify the email ID that should appear as "from" in the mail sent.

SMTP_SERVER

An alert through e-mail will be automatically be sent in error conditions like the server shuts down, it reaches not responding state, or goes out of memory. Specify the IP of the SMTP server used to send the mail.

Install Shared Report Server setup

Setup of Shared needs to be installed on the machine allocated to run Shared Node (where the folder has read/write permissions).

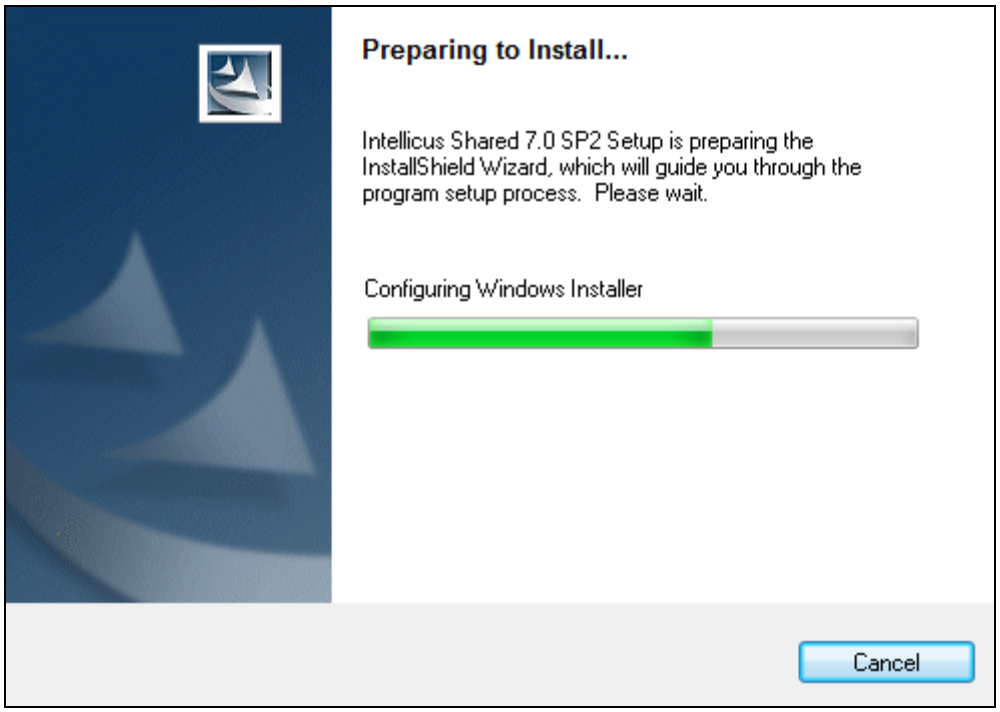

Figure 15: Launching installer

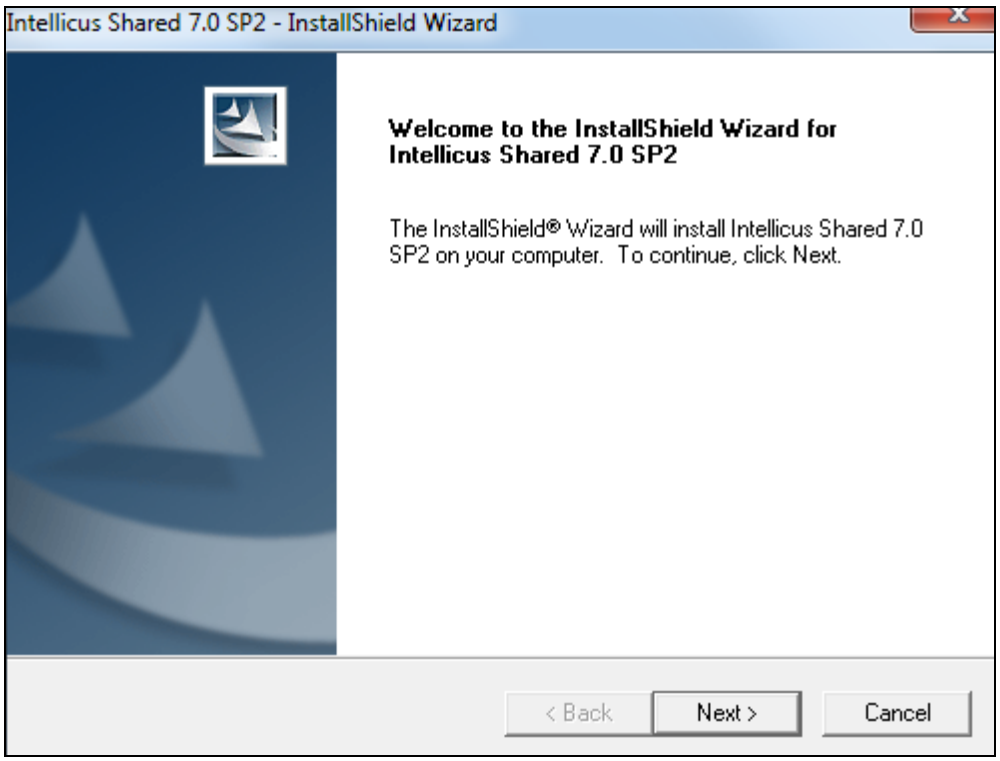

Figure 16: Ready to start

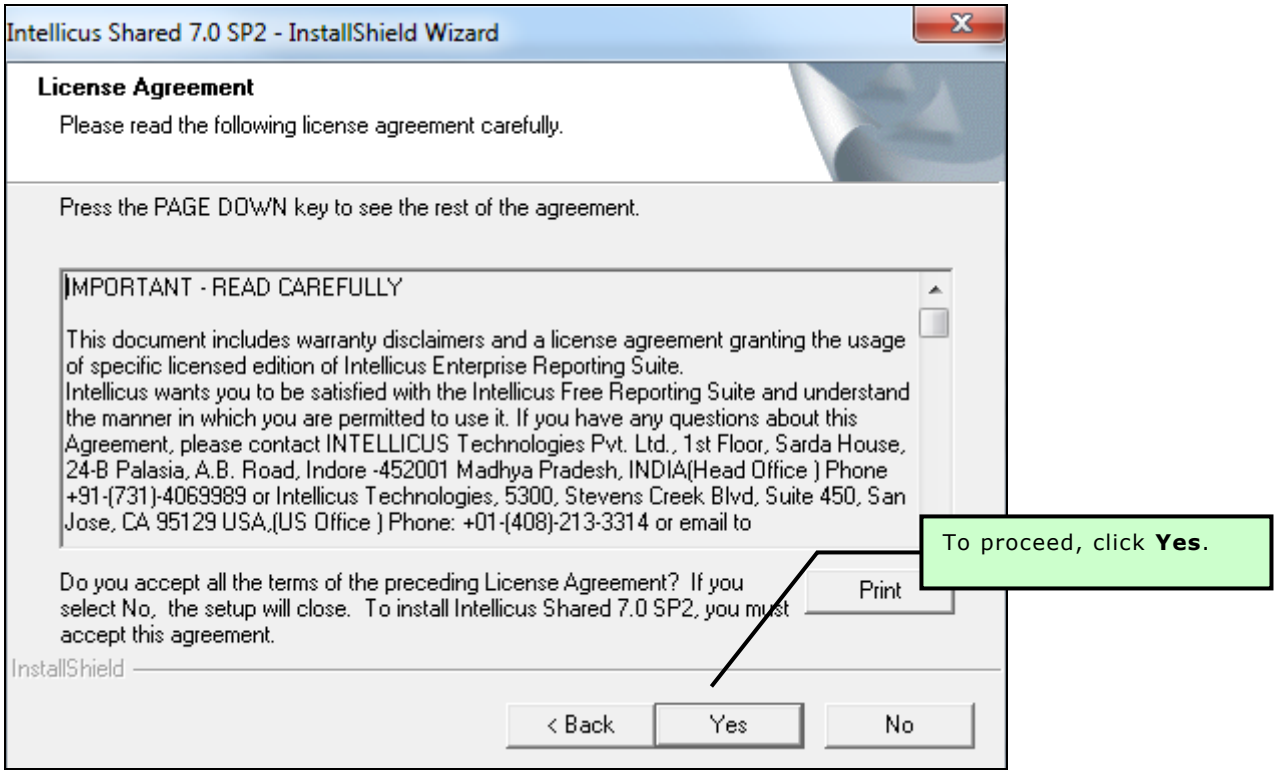

Figure 17: Accepting license agreement

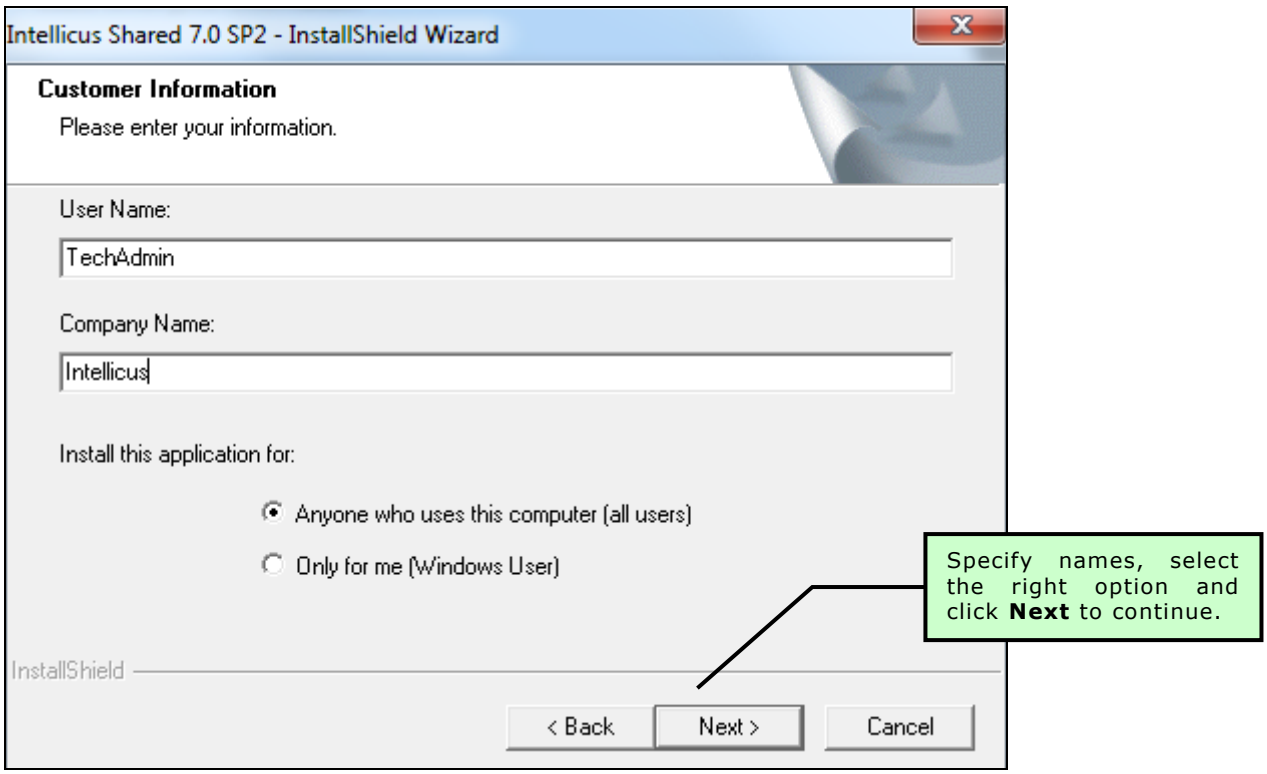

Figure 18: User Information

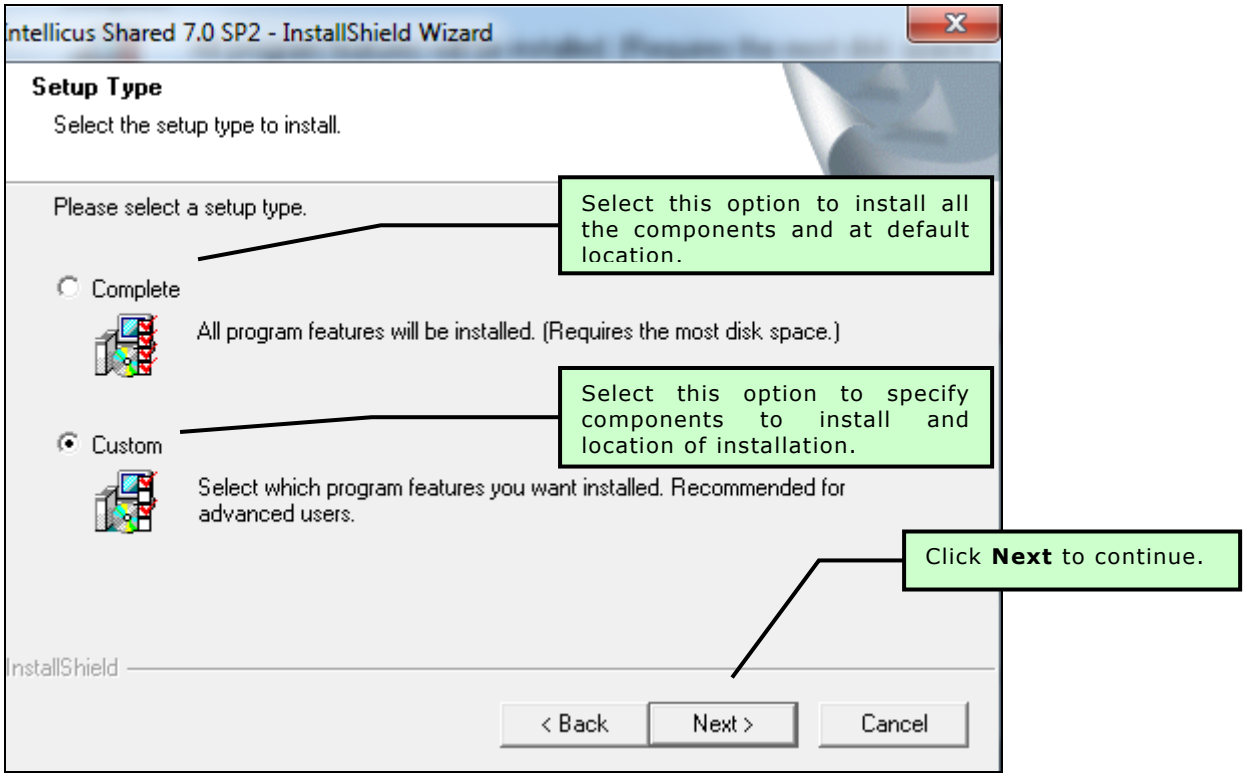

Figure 19: Decide setup type

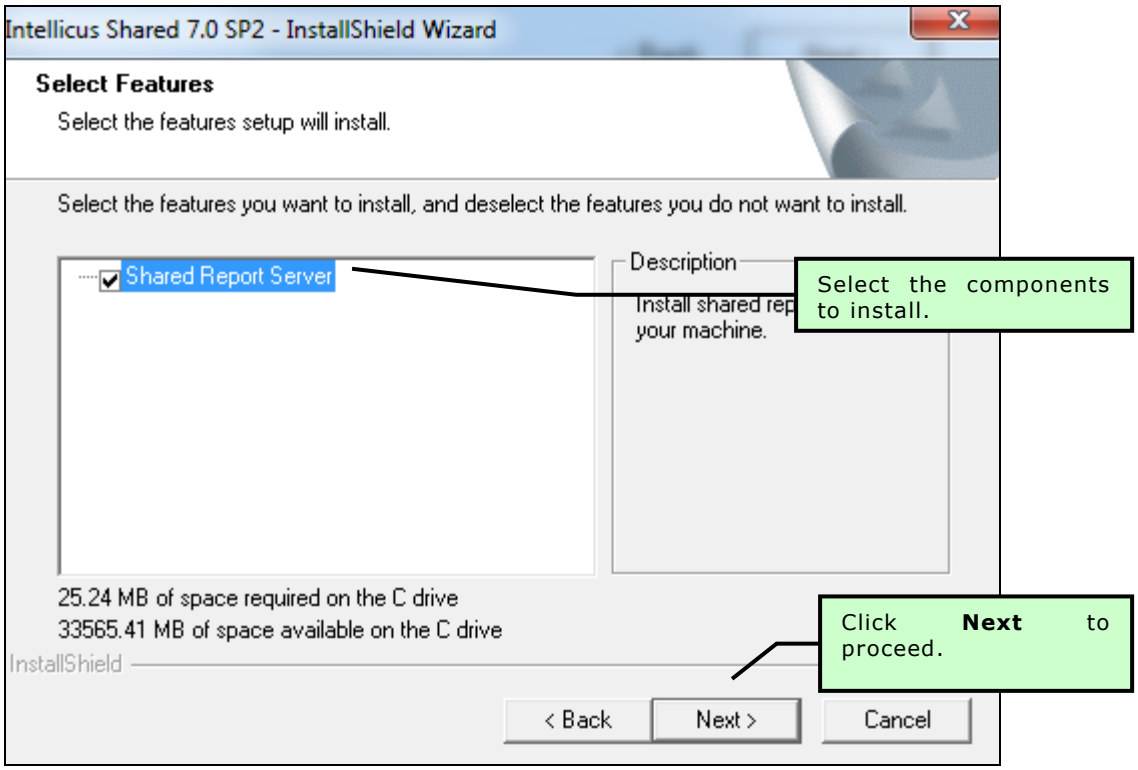

Figure 20: Custom setup > Select the components to install

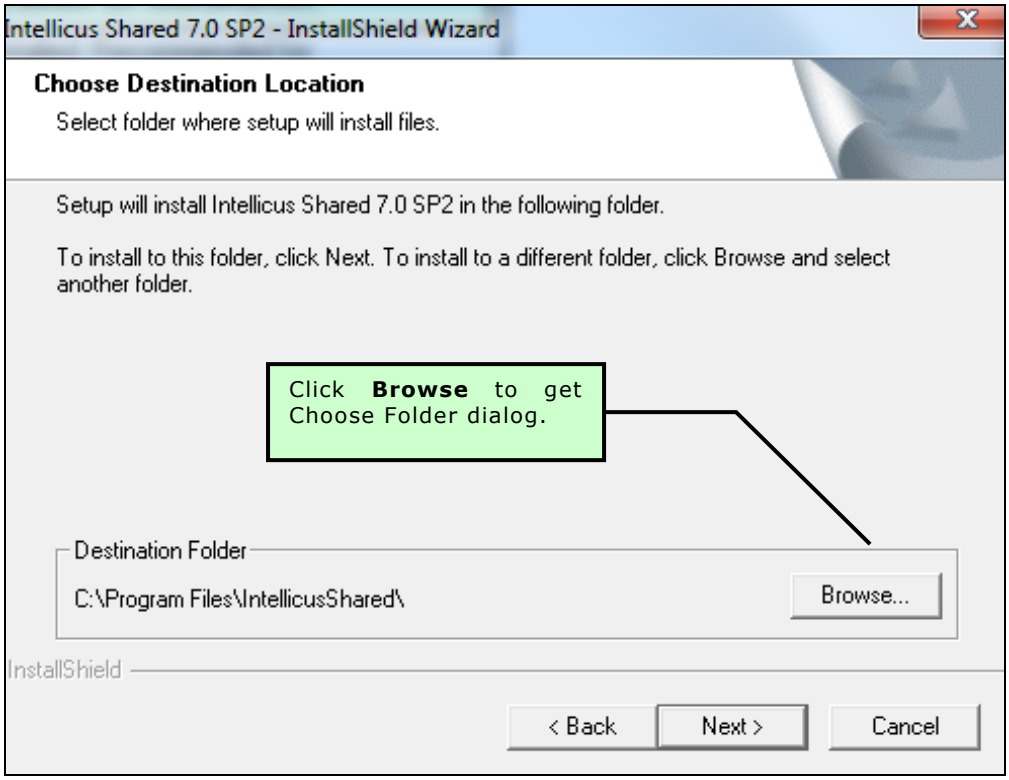

Figure 21: Custom Setup: Click **Browse** to get Choose Folder dialog

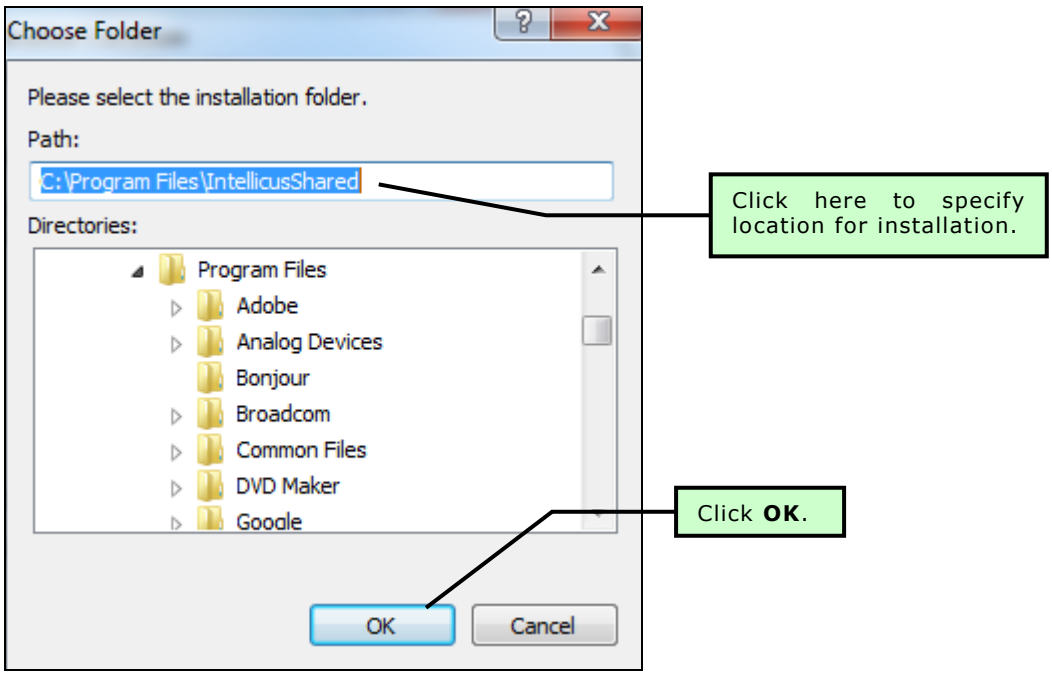

Figure 22: Custom setup: Specifying destination on Choose Folder dialog

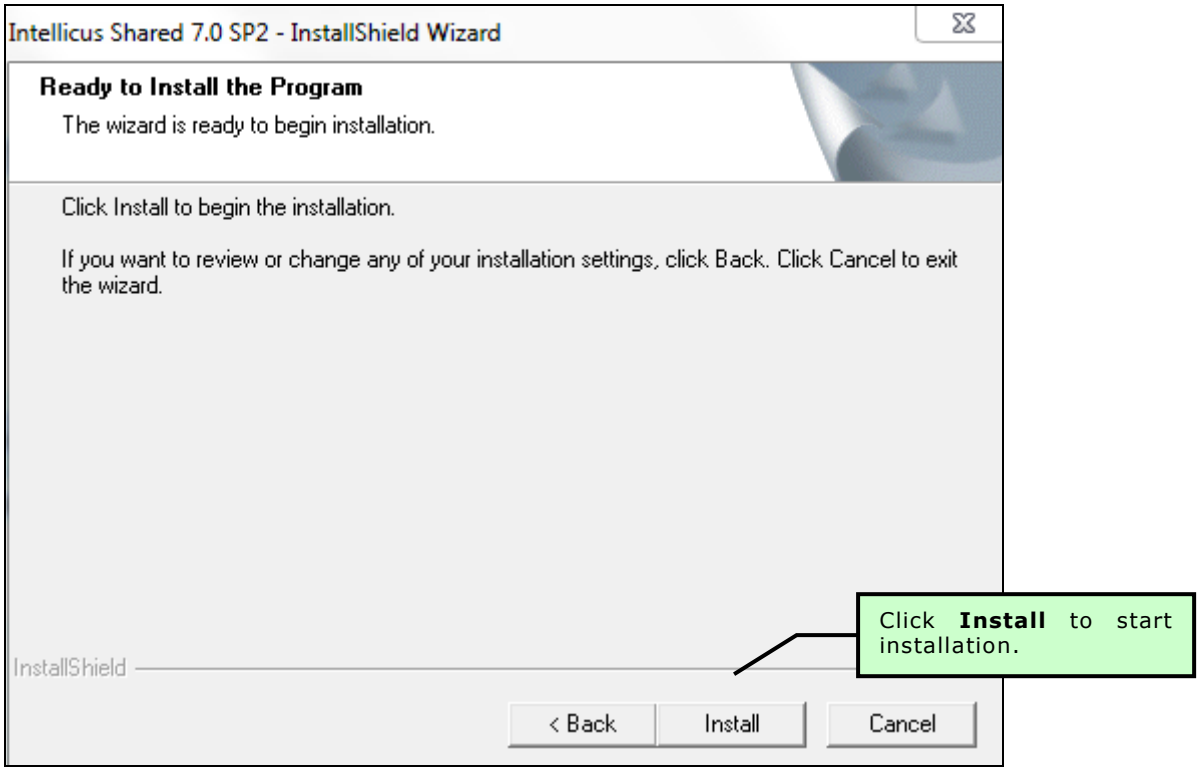

Figure 23: Ready to Install

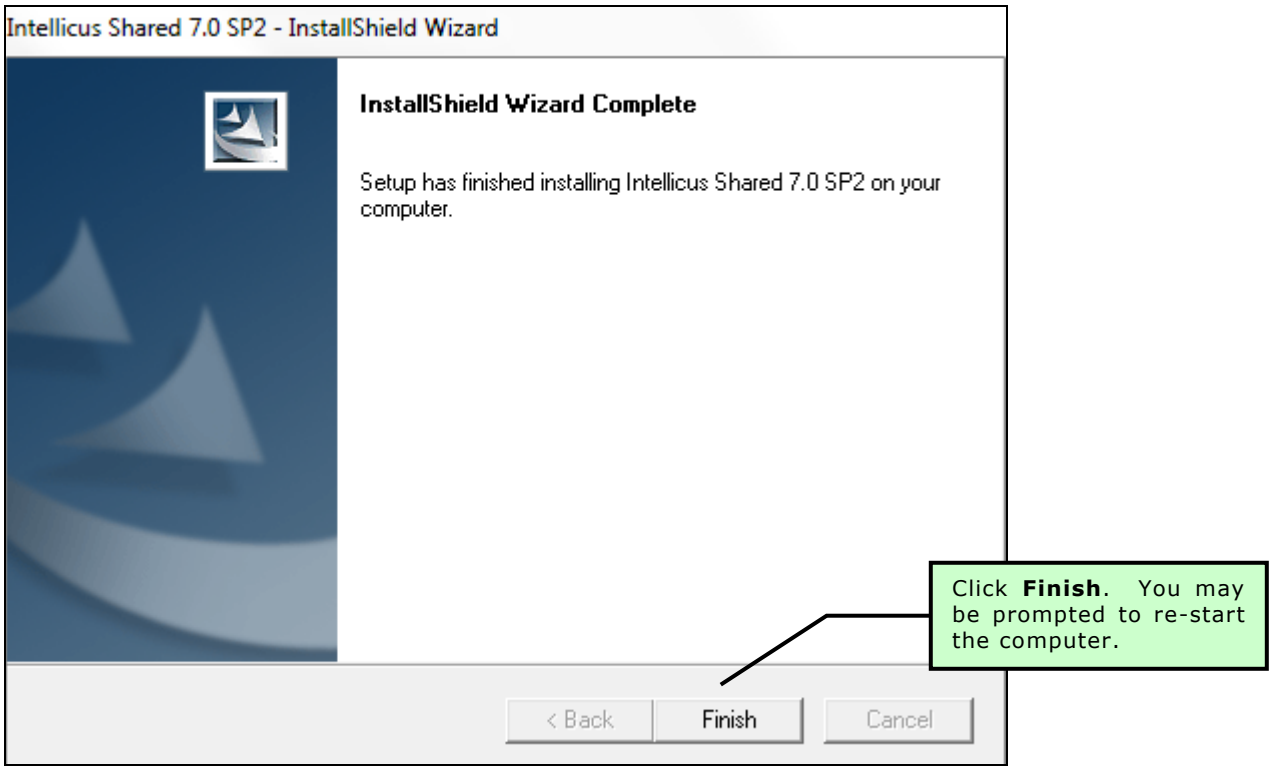

Figure 24: Installation complete

Install Web Portal setup

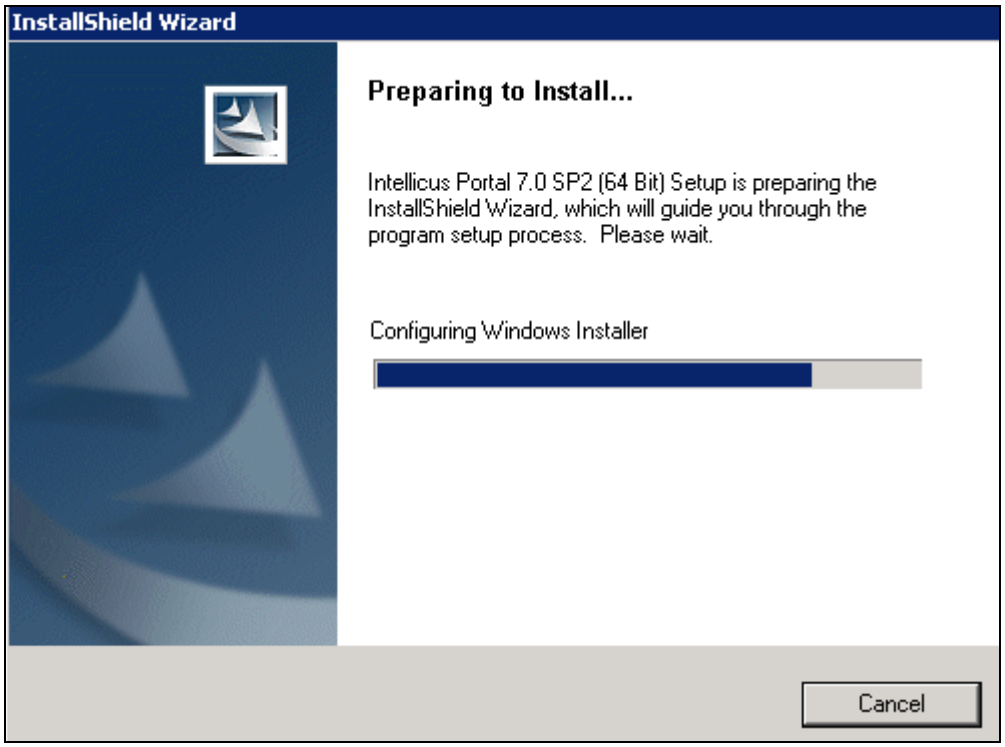

Figure 25: Launching installer

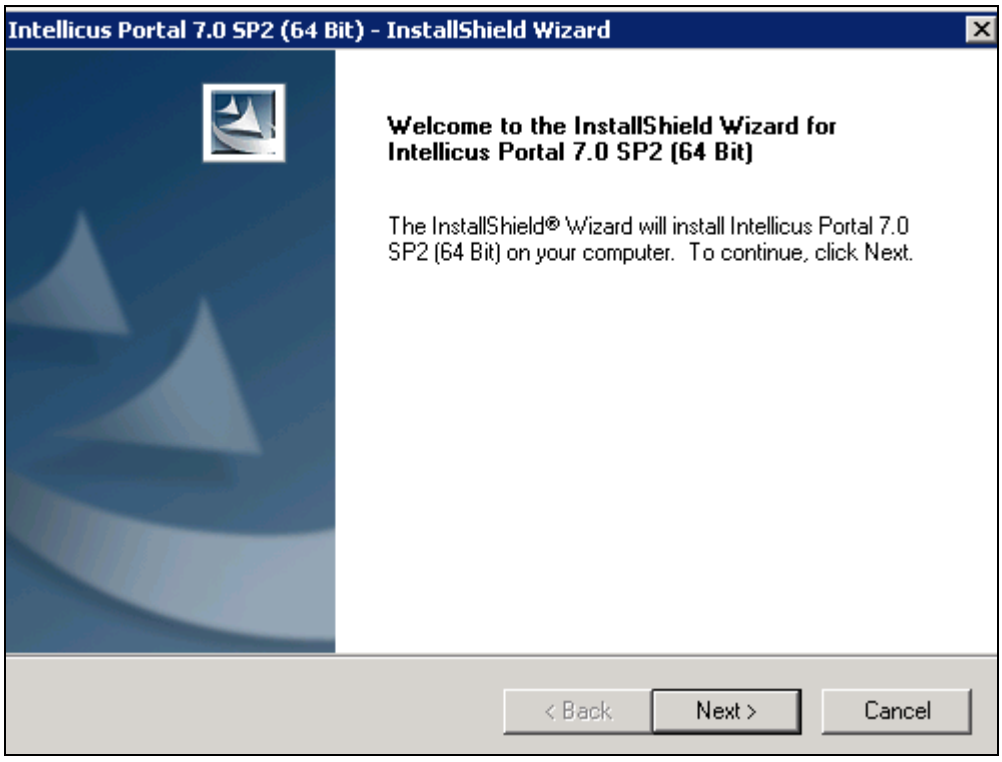

Figure 26: Ready to start

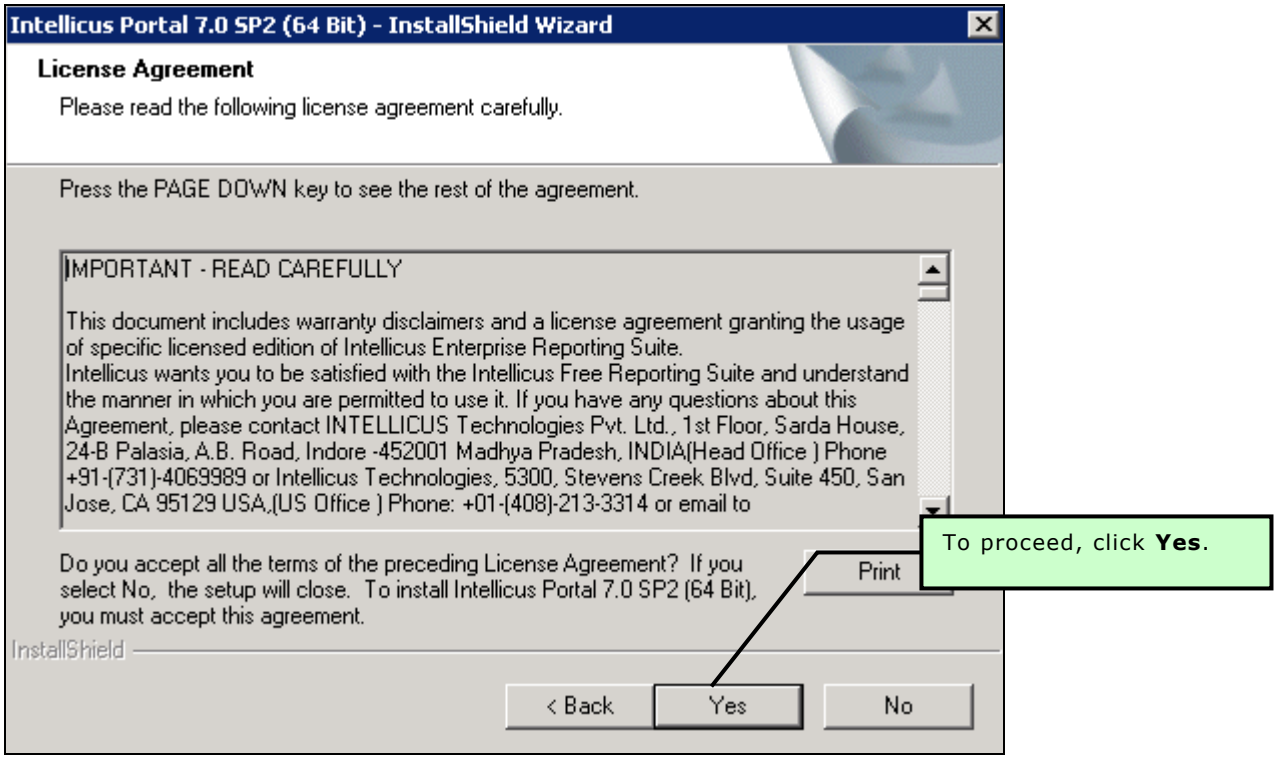

Figure 27: Accepting license agreement

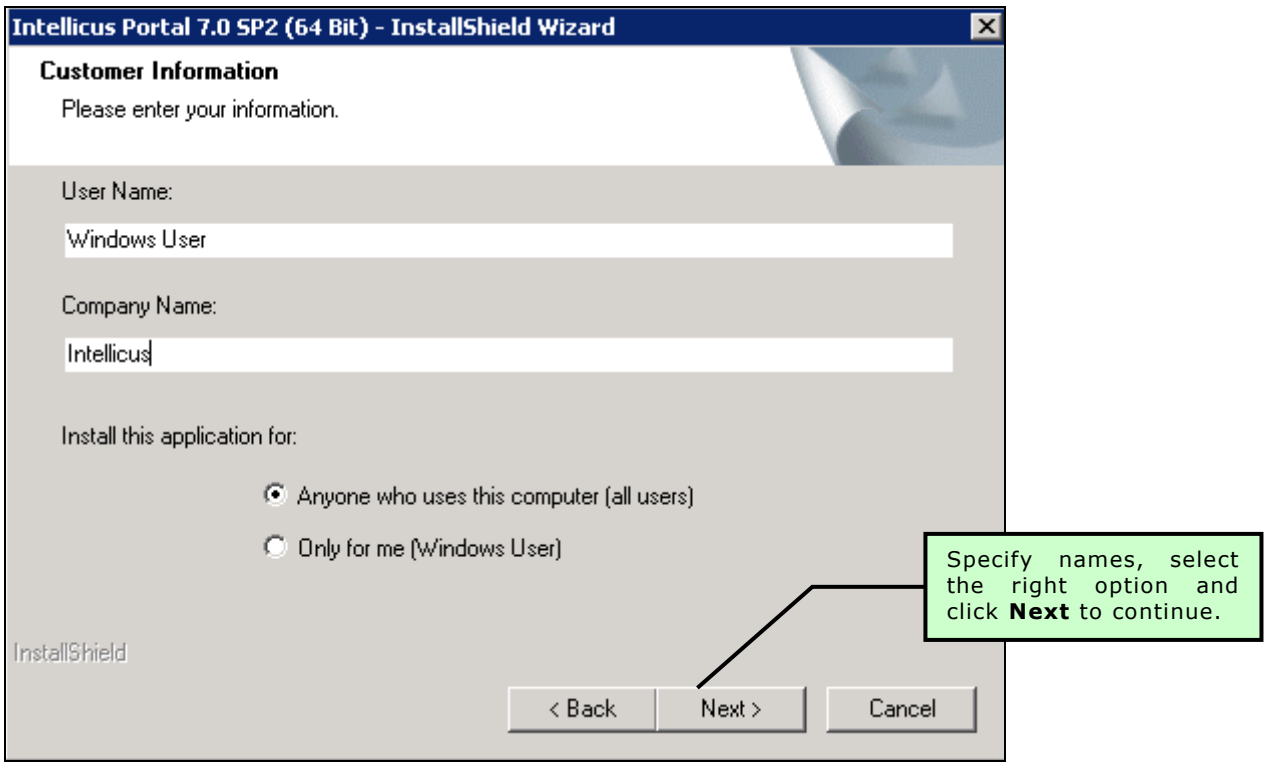

Figure 28: User Information

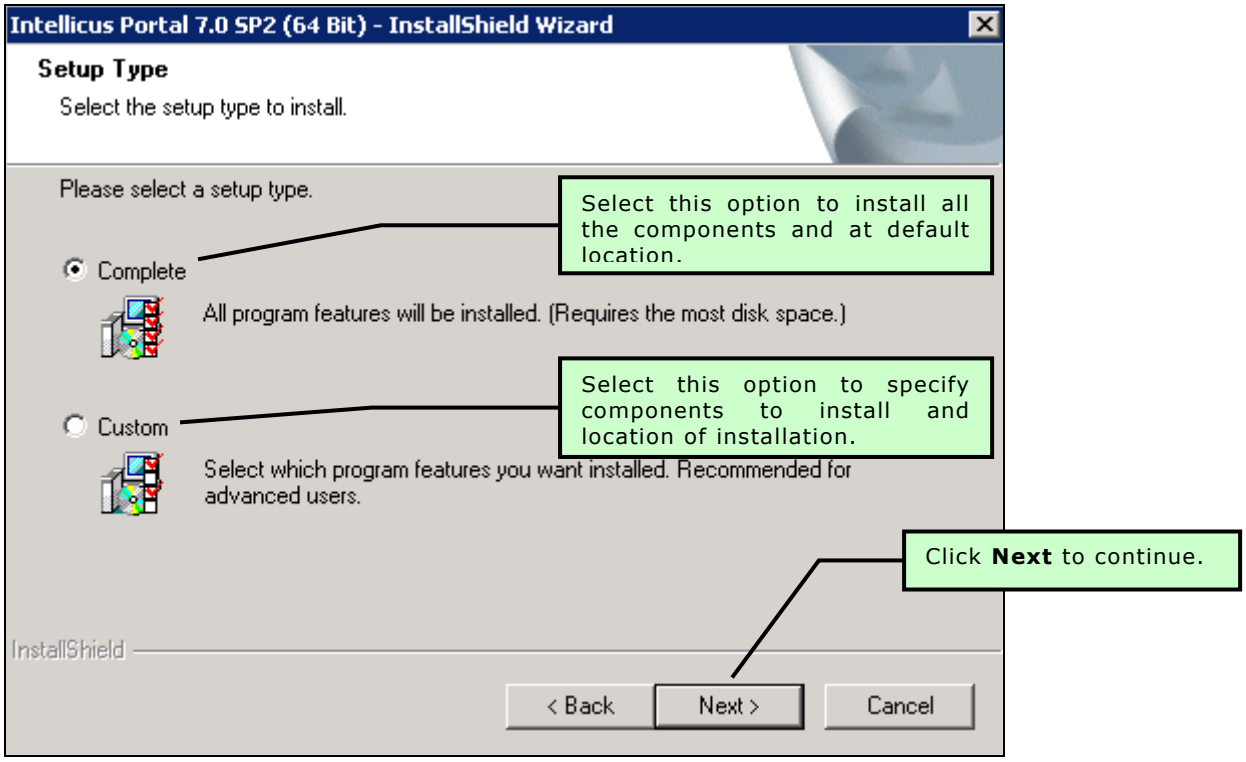

Figure 29: Decide setup type

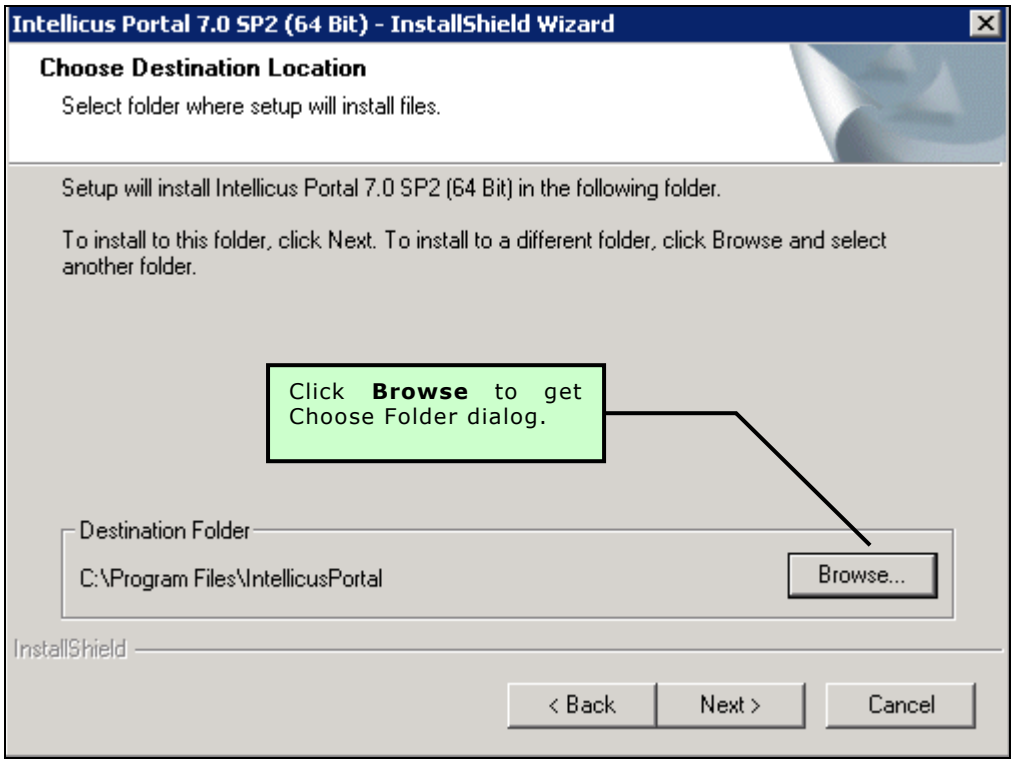

Figure 30: Custom Setup: Click **Browse** to get Choose Folder dialog

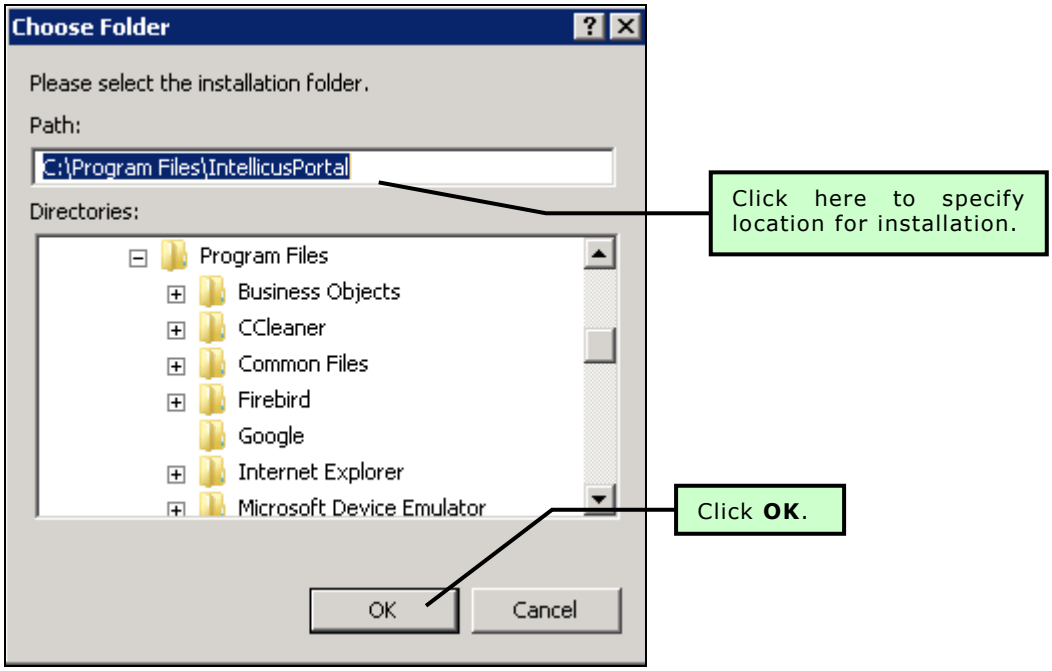

Figure 31: Custom setup: Specifying destination on Choose Folder dialog

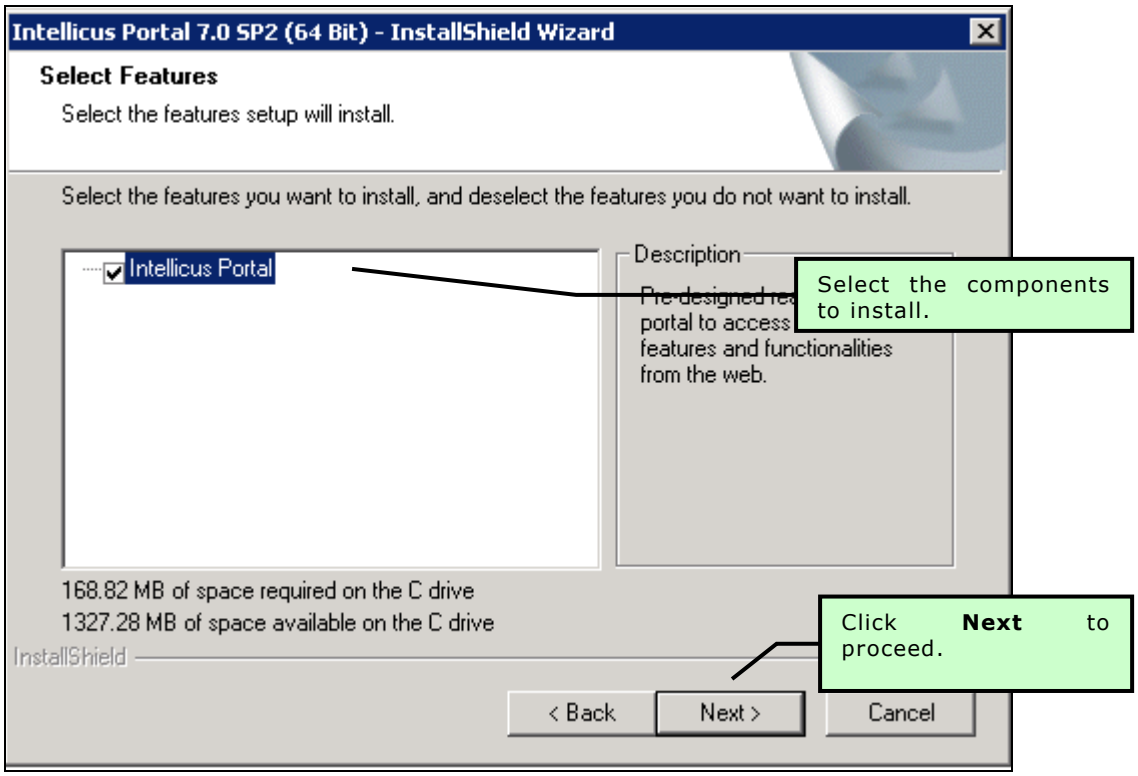

Figure 32: Custom setup > Select the components to install

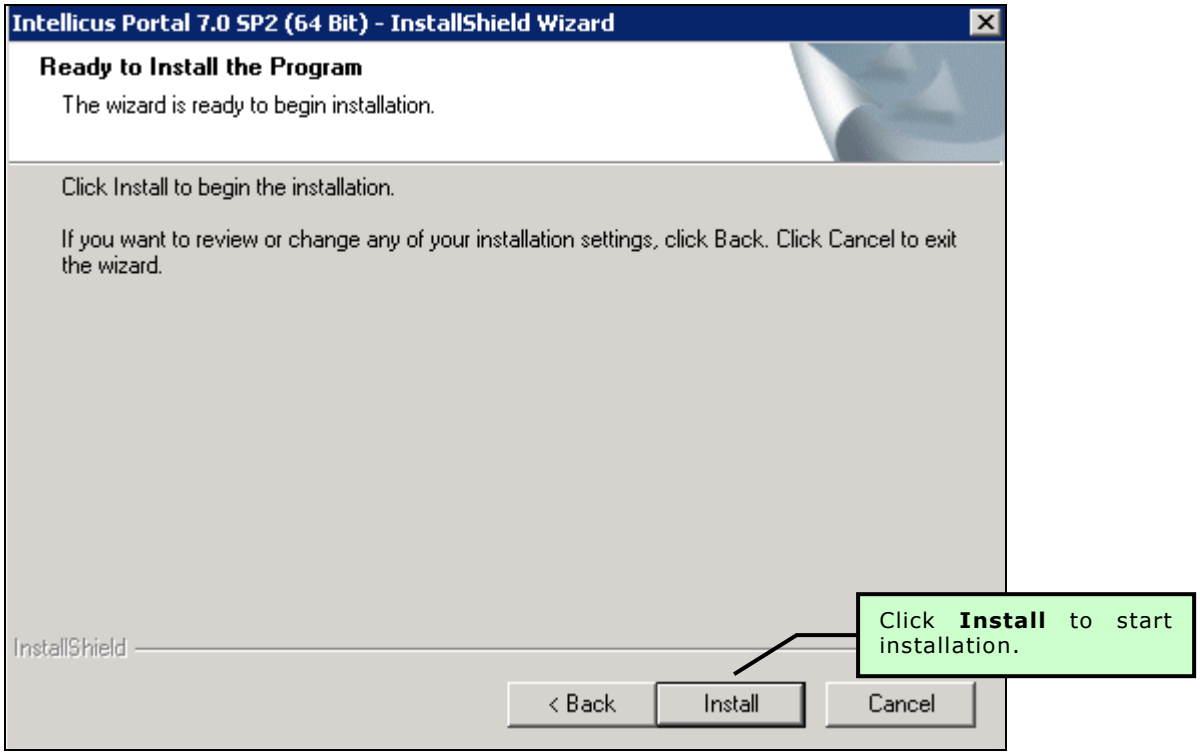

Figure 33: Ready to Install

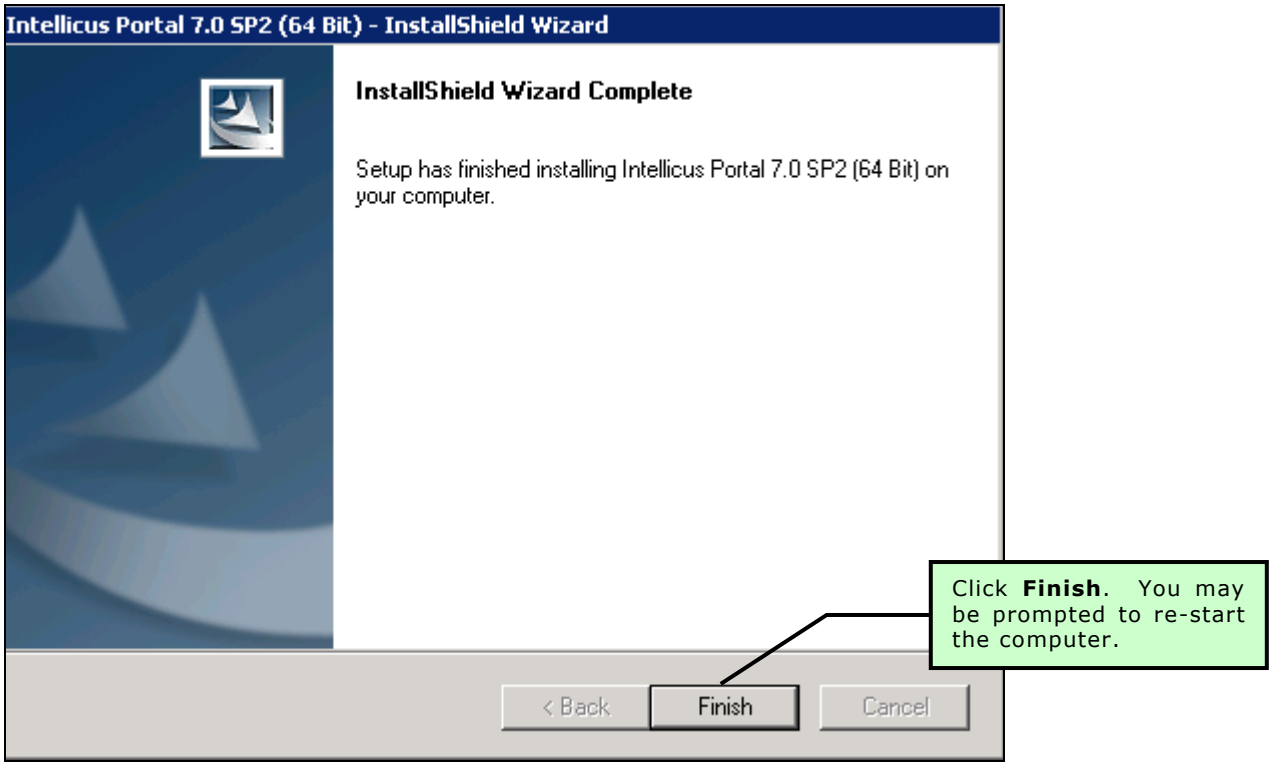

Figure 34: Installation complete

Install Cluster Report Server setup

Setup of Cluster Node needs to be installed on each of the machines allocated to run Cluster Node.

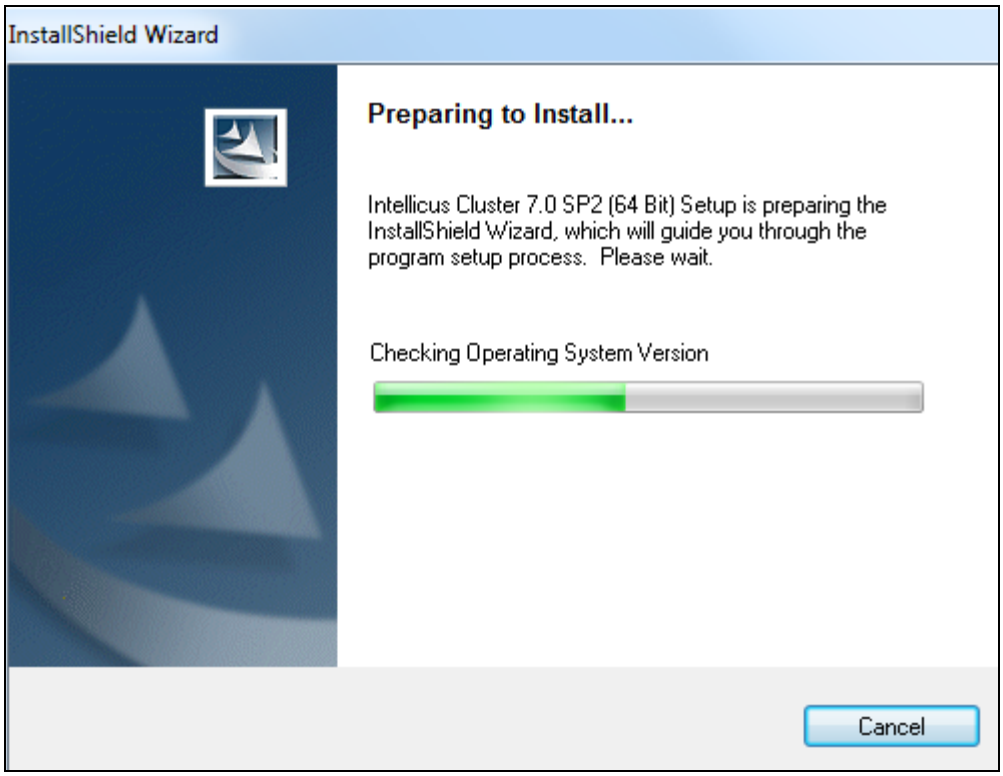

Figure 35: Launching installer

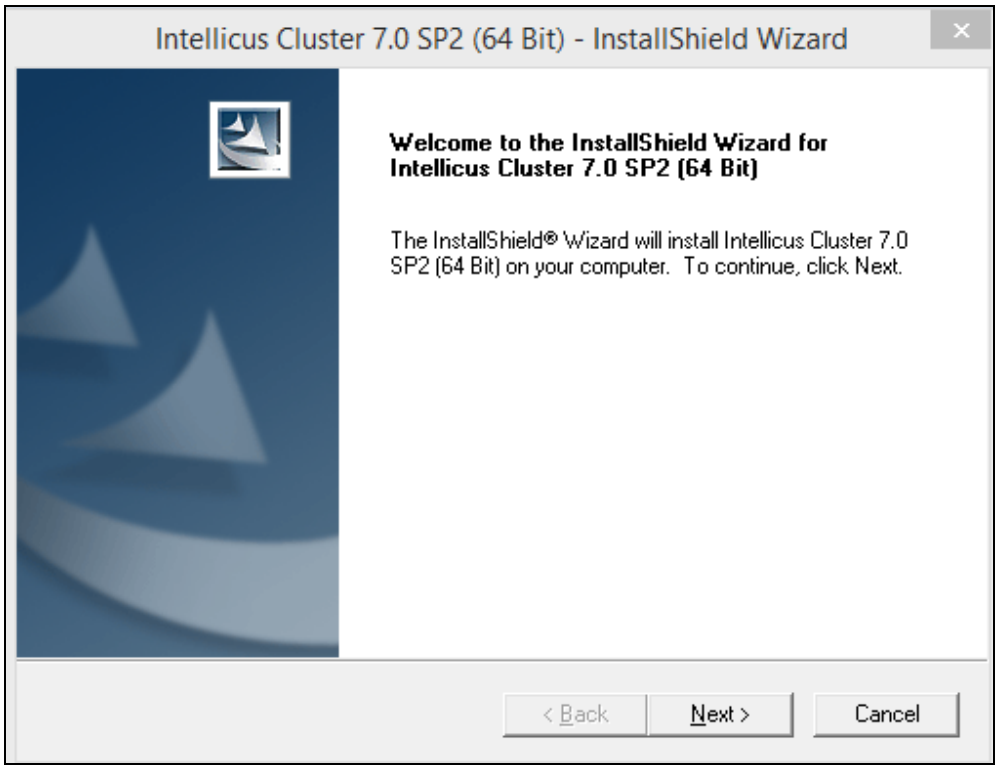

Figure 36: Ready to start

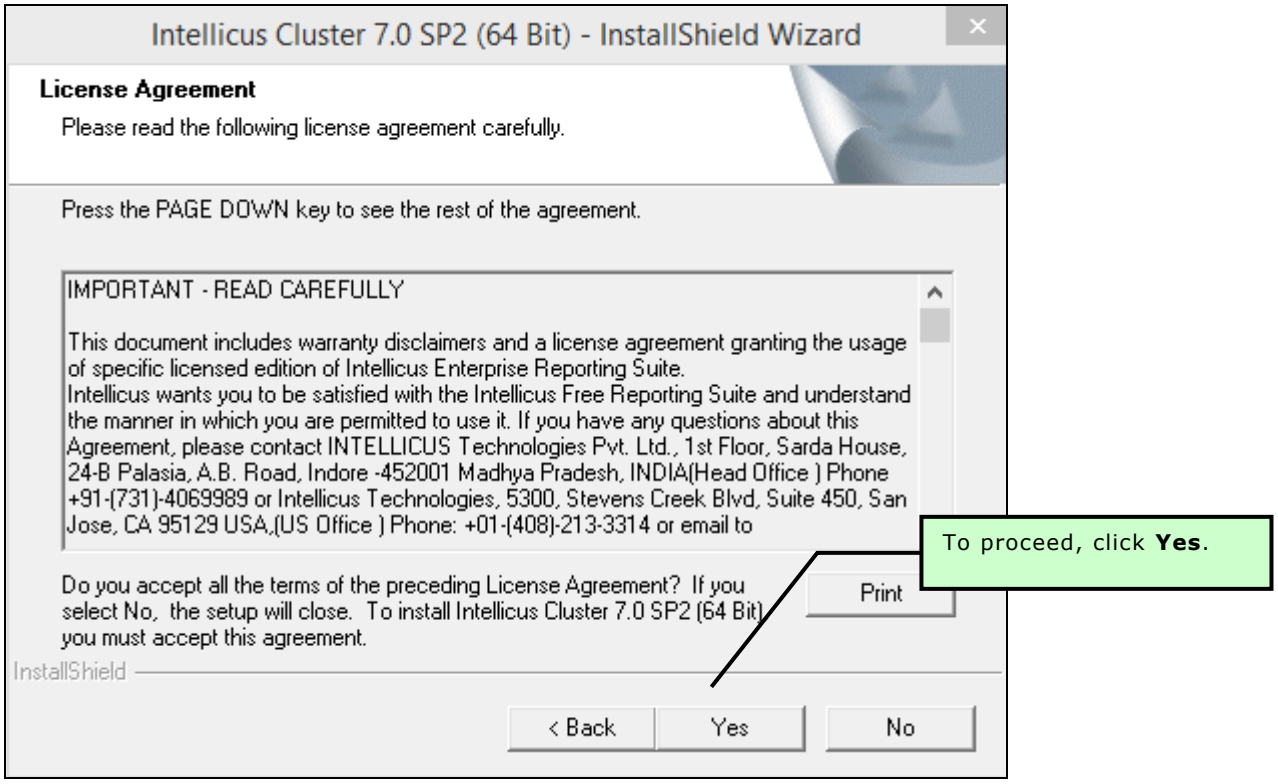

Figure 37: Accepting license agreement

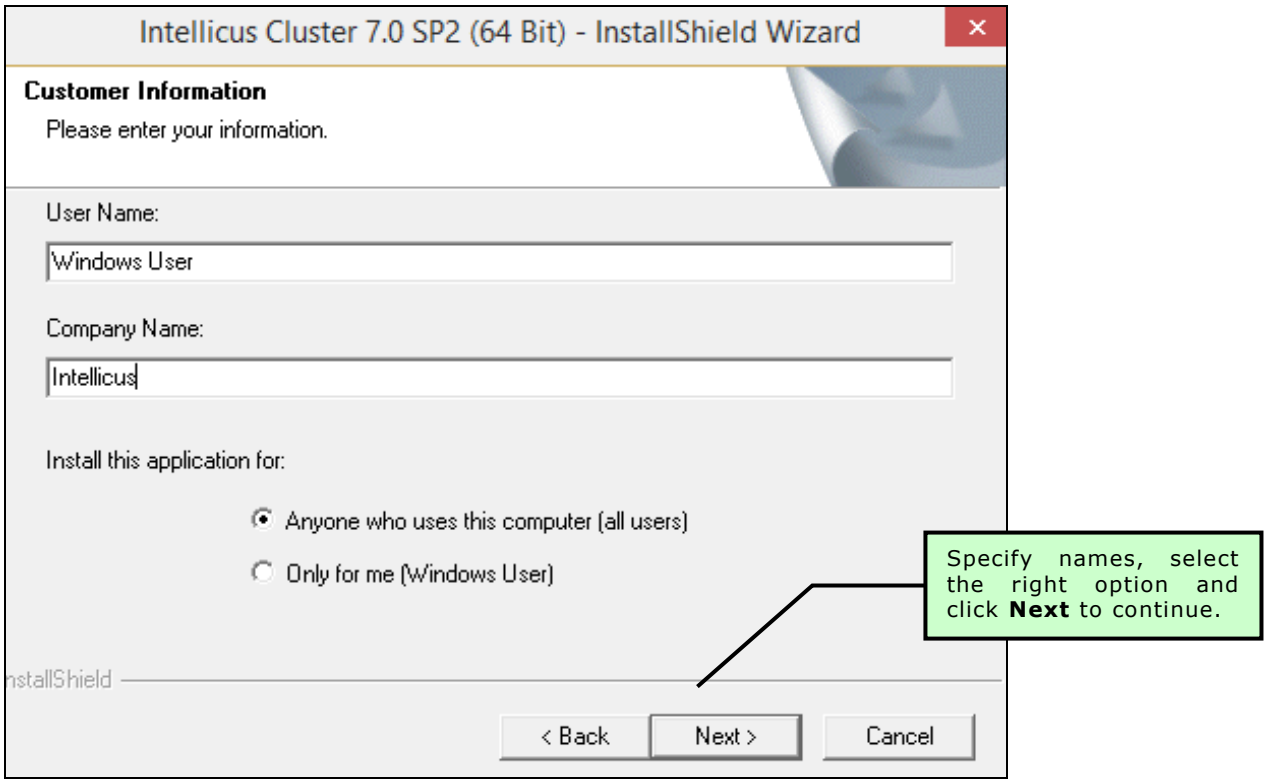

Figure 38: User Information

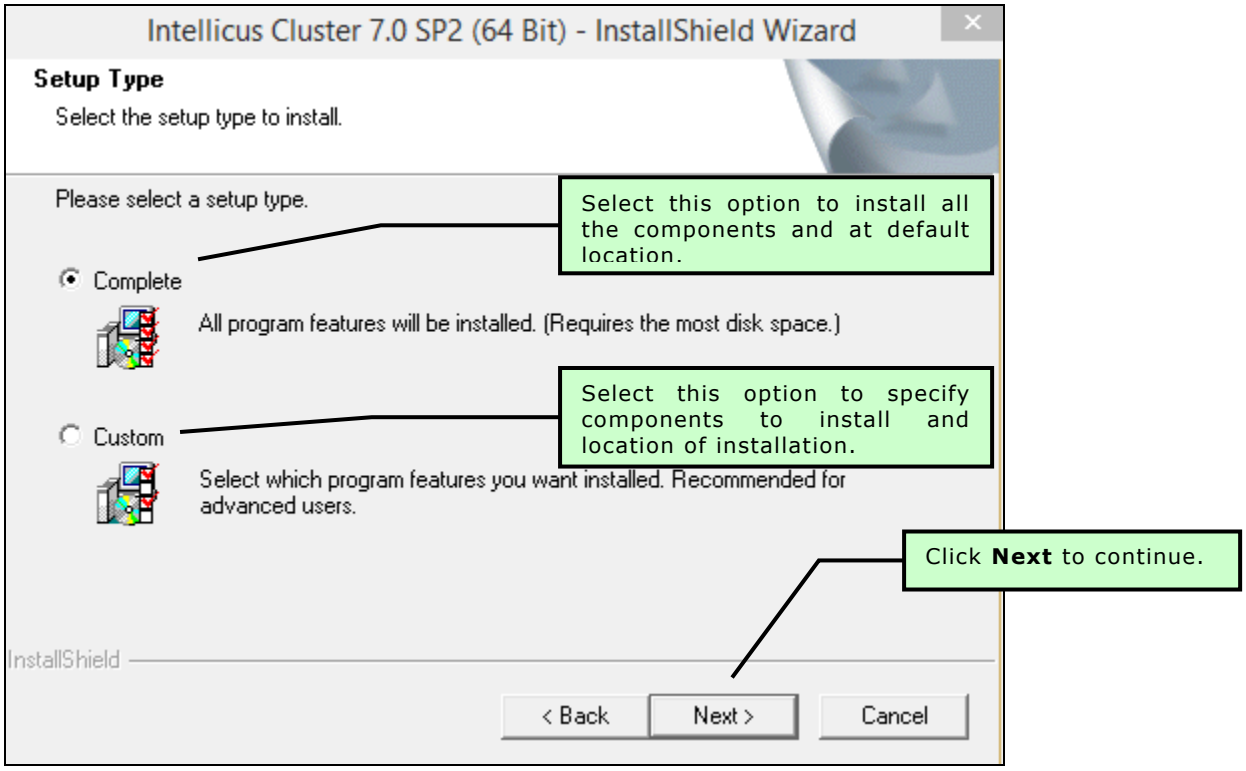

Figure 39: Decide setup type

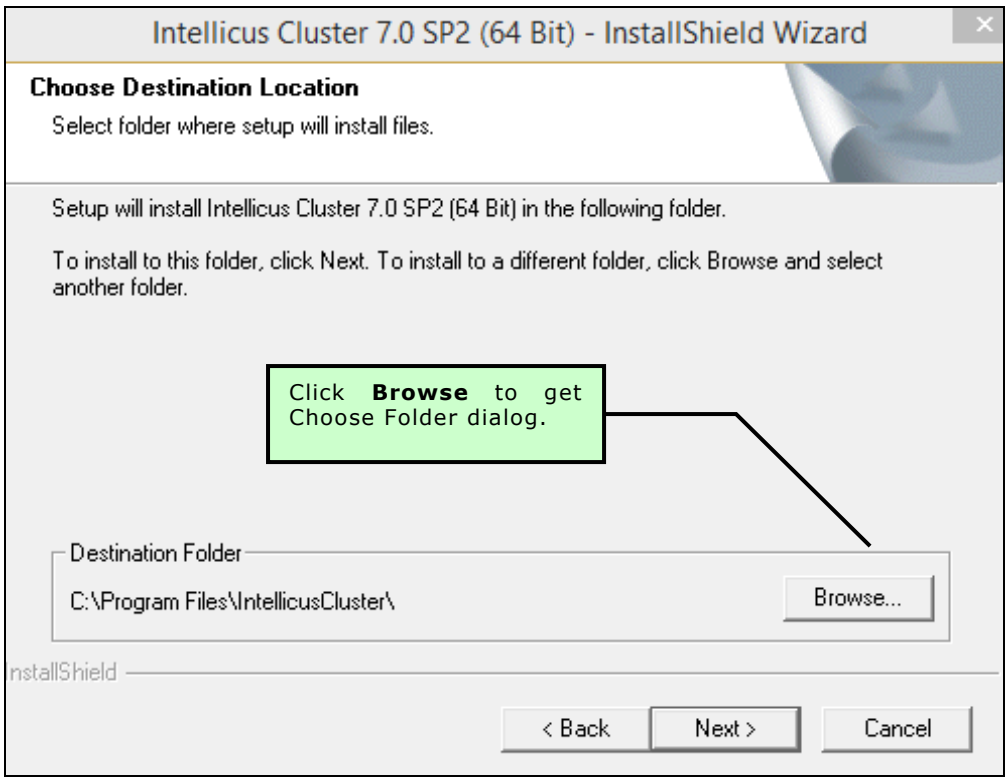

Figure 40: Custom Setup: Click **Browse** to get Choose Folder dialog

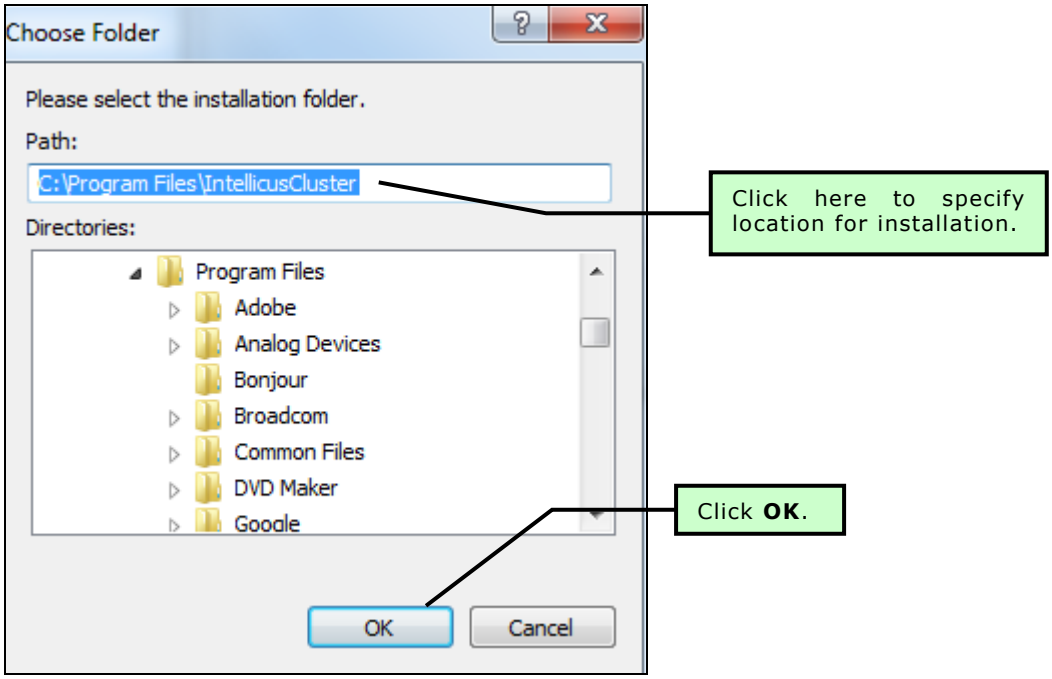

Figure 41: Custom setup: Specifying destination on Choose Folder dialog

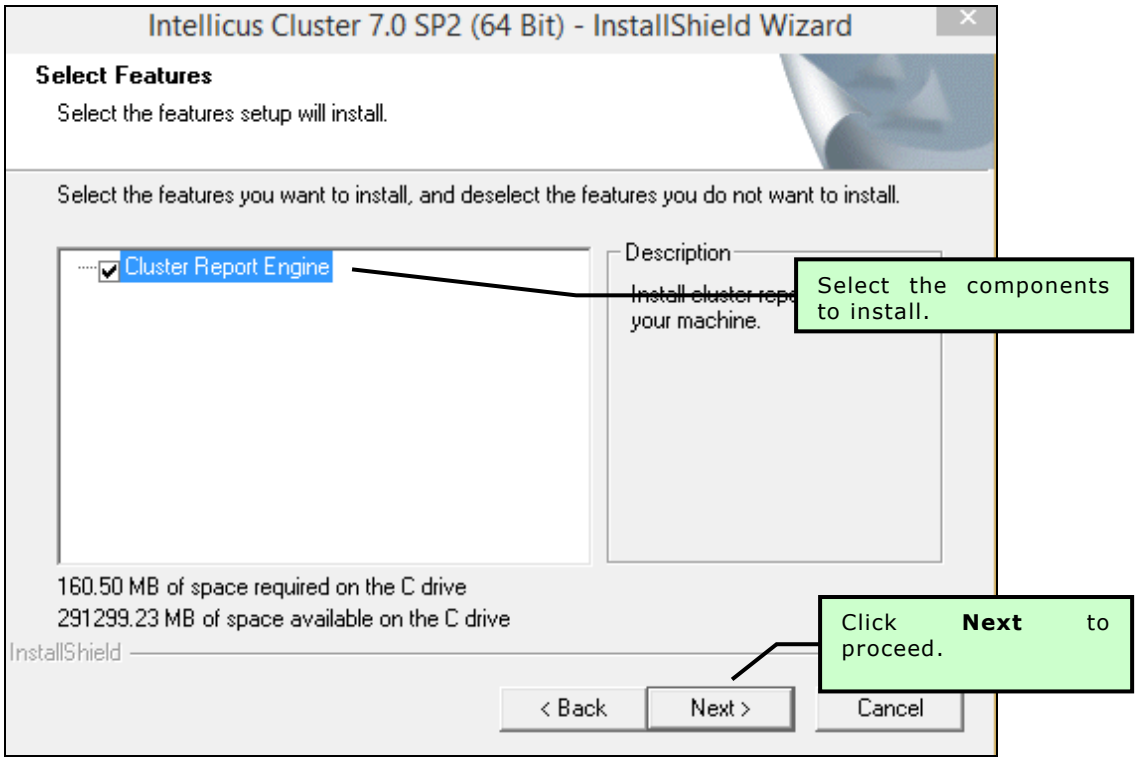

Figure 42: Custom setup > Select the components to install

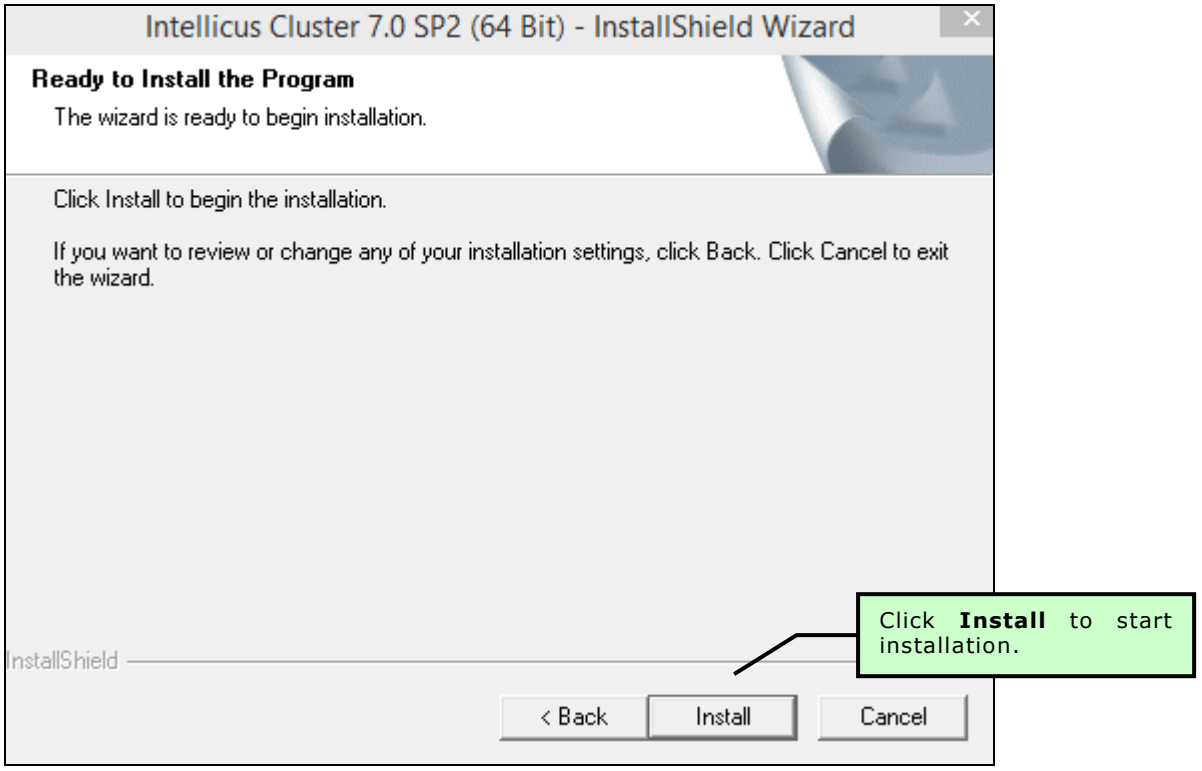

Figure 43: Ready to Install

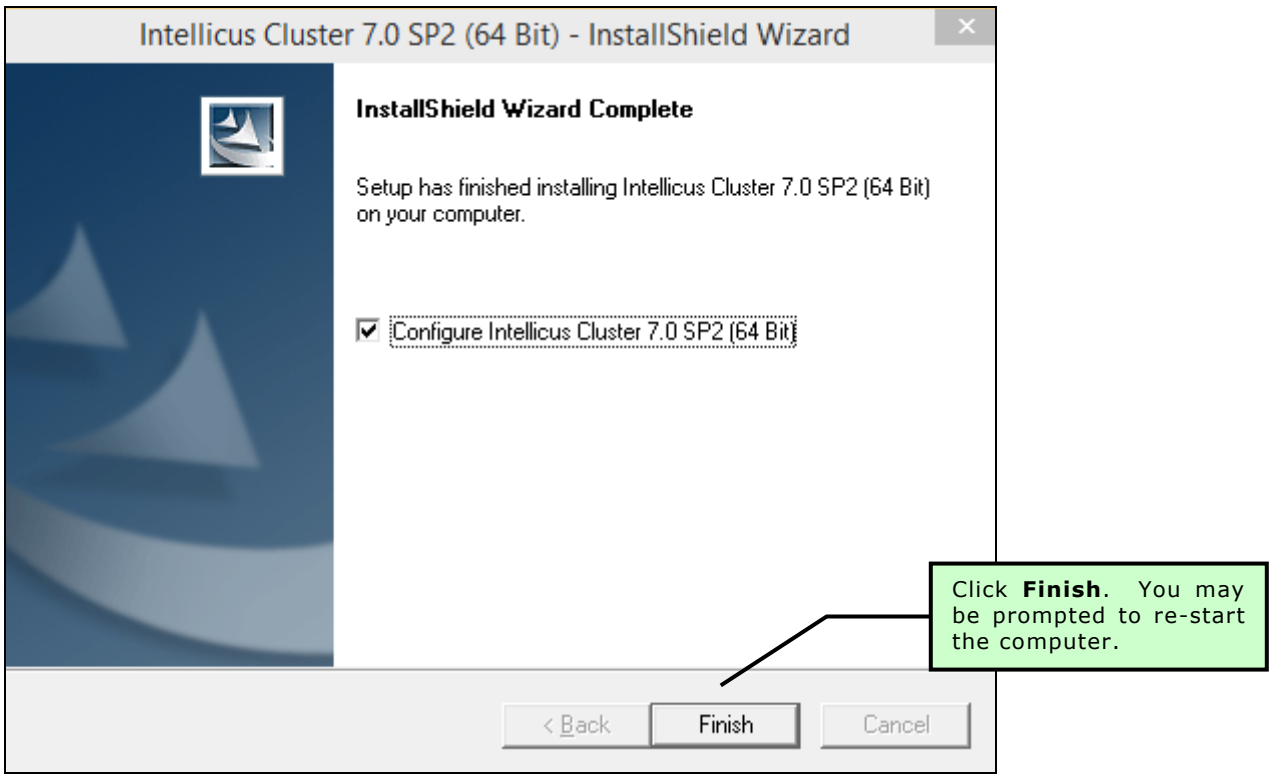

Figure 44: Installation complete

Upon successful installation, the system prompts you to configure the cluster:

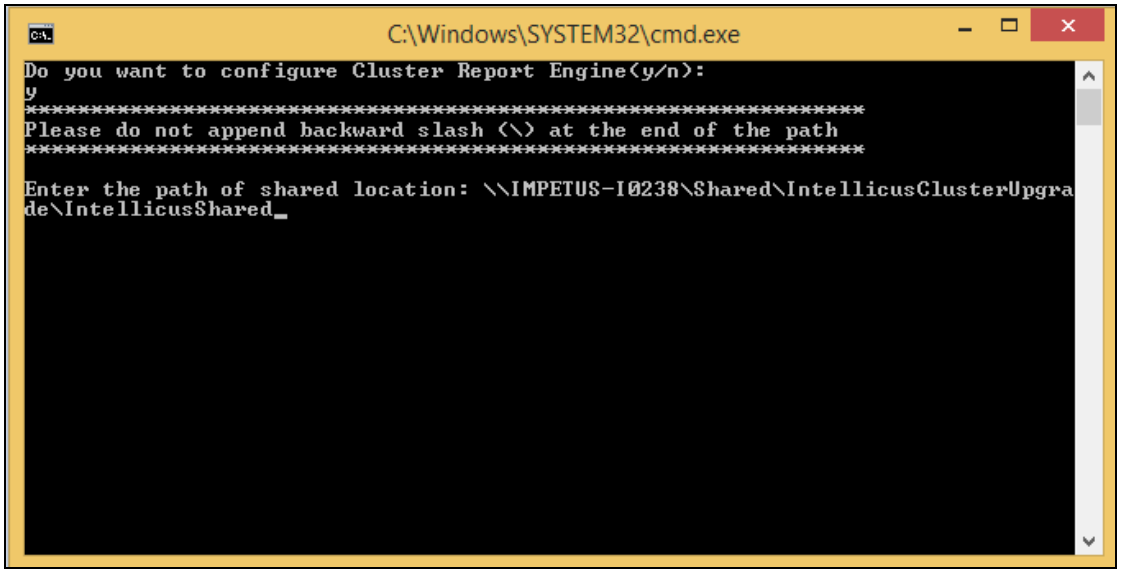

Figure 45: Configure Cluster Report Engine

After entering "y", you can then specify the path of shared location for successful configuration.

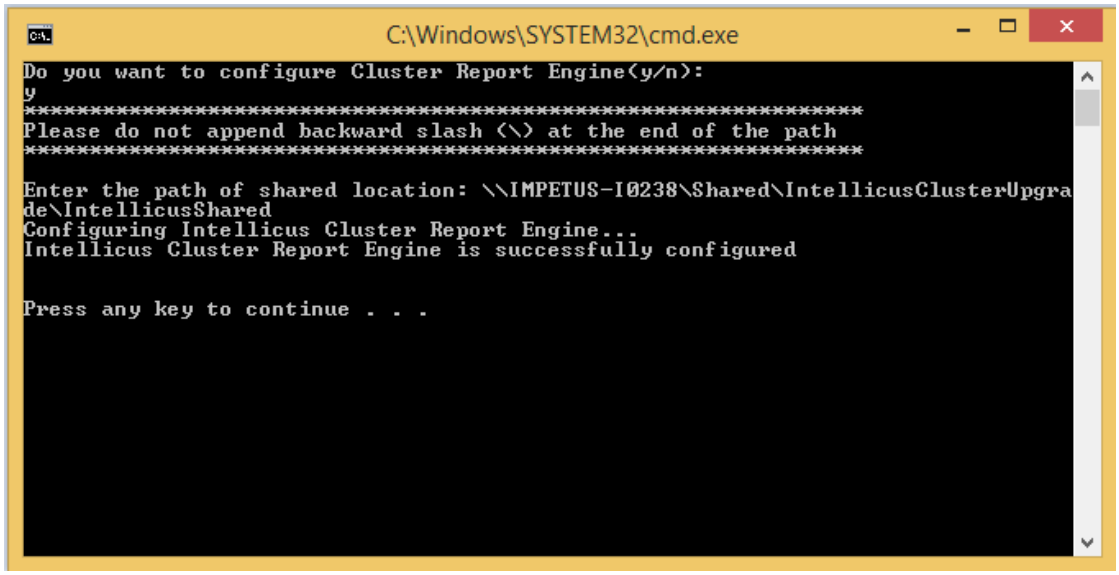

Figure 46: Successful Configuration

Configure Cluster Node

Deploying License on a node

Each node generates its license request file in the path:
<ClusterInstalledPath>\ClusterReportEngine\bin

A license file must be obtained by submitting this request file to your vendor. The obtained license must be deployed by manually copying to the license file in the path:
<ClusterInstalledPath>\ClusterReportEngine\bin

Note: Separate licenses should be purchased for each report server node

Restart after license deployment.

Configure each of the Cluster Report Servers

For all the cluster nodes, carry out the following configuration tasks:

- Set path of report server in cluster.properties file
- Set the port of the Cluster node in cluster.properties file
- Set schedule preferences in cluster.properties file
- Make changes in run.bat file

Path and IP information of Intellicus Report server is set in cluster.properties file. This file is at path IntellicusCluster\ClusterReportEngine\cluster folder.

Configurations in cluster.properties file

Cluster Report Server setup places file cluster.properties in IntellicusCluster\ClusterReportEngine\cluster folder.

Modify values of following properties

REPORT_ENGINE_FOLDER

In REPORT_ENGINE_FOLDER property, specify the location where Shared Intellicus Report Server is installed.

For example:

REPORT_ENGINE_FOLDER=//servers/IntellicusShared/ReportEngine

Here, "servers" is machine name on which Intellicus Report Server is installed.

REPORT_ENGINE_FOLDER= \\\\192.168.33.65\\IntellicusShared\\ReportEngine

Here, 193.45.34.24 is IP on which Shared Intellicus Report Server is installed.

Port

In LISTENER_PORT property, specify the port at which this cluster node will listen.

For example:

LISTENER_PORT = 50001.

DEPLOYMENT_TYPE

Specify STANDALONE if Intellicus is running as standalone. Specify CLUSTERED if Intellicus is running in the form of a cluster.

Default: CLUSTERED
Example: DEPLOYMENT_TYPE=CLUSTERED

Making changes in run.bat

In run.bat file specify the path where Shared Intellicus Report Server is installed. This is set in line under REPORT_ENGINE_FOLDER. For example,

REPORT_ENGINE_FOLDER=//servers/ReportEngine

Here, "servers" is machine name on which Shared Intellicus Report Server is installed.

For example, REPORT_ENGINE_FOLDER= \\193.45.34.24\Shared\IntellicusShared\ReportEngine
Here, 193.45.34.24 is IP on which Intellicus Report Server is installed.

Making changes in shutdown.bat

In shutdown.bat file specify the path where Shared Intellicus Report Server is installed. This is set in line under REPORT_ENGINE_FOLDER. For example,

REPORT_ENGINE_FOLDER=//servers/ReportEngine

Here, "servers" is machine name on which Shared Intellicus Report Server is installed.

For example, REPORT_ENGINE_FOLDER= \\193.45.34.24\Shared\IntellicusShared\ReportEngine

Here, 193.45.34.24 is IP on which Intellicus Report Server is installed.

Configure each of the Cluster Web Servers

For all the cluster web server nodes, carry out the following configuration tasks:

- Set path of report server in ReportClient.properties file
- Make changes in run.bat file

Configure portal Property file

When clustering and load balancing is installed, portal needs to point to load balancers instead of pointing to report server.

This change is made in ReportClient.properties file available on machine on which Shared Intellicus Client (portal) is installed.

When Intellicus is installed in Jakarta, this file is placed at path:

```
IntellicusShared\Jakarta\webapps\intellicus\client\config\ReportClient.properties .
```

Change values of following properties:

REGISTRY_ENABLED

Set this property to TRUE. For example:

REGISTRY_ENABLED=TRUE

REGISTRIES

Specify all IP and port of all the load balancers separated only by semi colon (no space).

Example:

REGISTRIES=201.90.56.23:60000; 201.90.88.95:60002; *

Save the file after making changes.

Configure run.bat file

Modify run.bat file (IntellicusCluster\Jakarta\bin) to set the path to read ReportClient.properties

```
set                                                PROPERTY FILENAME="-
DIntellicus.propertyfilepath=\\192.168.33.65\Shared\IntellicusSha
red\jakarta\webapps\intellicus\client\config\ReportClient.propert
ies"
```

How Property values are used

When value of REGISTRY_ENABLED is FALSE, it is assumed that clustering does not exist and client sends request to the IP specified in REPORT_ENGINE_IP property.

When value of REGISTRY_ENABLED is set to TRUE, client sends request to the 1st load balancer IP specified in REGISTRIES property.

If that load balancer is not available, client sends request to next load balancer in the list.

At a time multiple load balancers may be active. IP needs to be specified only by primary load balancer.

If the load balancer that client communicates with is not the primary load balancer, then it provides IP of the primary load balancer to the client. (So that from next time all the client requests should go to primary load balancer).

The client then checks if the load balancer IP provided exists in the list specified in REGISTRIES property.

Note: If the IP exists or it does not exist but list also has *, client sends the request to that load balancer. If it does not exist in the list; and list does not have *, then the client fallsback to the IP specified in REPORT_ENGINE_IP property.

When client sends request to the primary load balancer, It provides IP of the server where the client should send this request.

Now that the client know server IP, it sends the request to that server.

Run sequence

There is no predefined running sequence. Any of the components can be started or stopped at any time.

To run load balancer

If the machine is re-started after setup and service was also installed during installation, it will automatically start the load balancer.

As one of the results of successful installation, the setup creates a short cut in the start menu:

Start > Programs > Intellicus > Start Load Balancer

Follow this path to click Start Load Balancer to launch the Load Balancer.

Note: The load balancer that boots first, becomes primary load balancer. If primary load balancer fails, any of the secondary load balancers will become primary load balancer.

To stop load balancer

From Start menu

As one of the results of successful installation, the setup creates a short cut in start menu:

Start > Programs > Intellicus > Stop Load Balancer

Click **Stop Load Balancer** to stop the Load Balancer.

From Service Icon

This is applicable when Service was also installed during installation, is currently running and Load Balancer was started by Service.

1. Right-click the Service icon. A context-menu appears.
2. Click the **Stop Load Balancer** option.

Service will stop the Load Balancer.

To run Cluster node

As one of the results of successful installation, the setup creates a short cut in the start menu:

Start > Programs > Intellicus > Start Cluster Report Server

Follow this path to click Start Cluster Report Server to launch the Load Balancer.

To stop cluster node

From Start menu

As one of the results of successful installation, the setup creates a short cut in the start menu:

Start > Programs > Intellicus > Stop Cluster Report Server

Click **Stop Cluster Report Server** to stop the cluster report server.

Load Balancer page on Portal

When Intellicus deployed in a cluster is up and running, all further changes can be made in the environment from the **Cluster** page on Portal.

To get the **Cluster** page, click **Administration** menu pad > **Configure** option > **Cluster** tab.

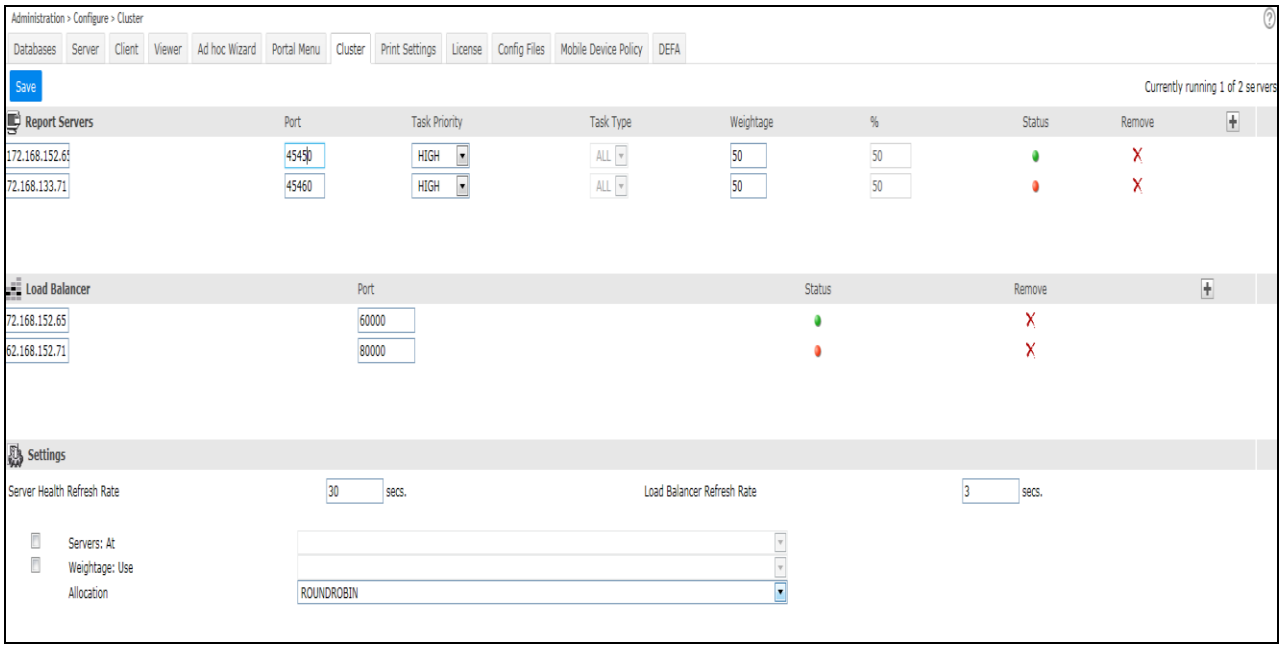

Figure 47: Cluster page on Portal

Use this page to Configure

- Cluster nodes (Report Servers)
- Load Balancers
- Settings

The information being set here is updated in the respective files on all cluster nodes, load balancers and client machines at a regular interval.

Cluster Nodes (Report Servers)

You can do following activities related to report servers:

- Add a server
- Remove a server
- Change server properties

Adding a server

1. Click  icon appearing on the right side of the tab header.
2. Specify values in the empty row that is added at the end of the list.
3. Click **Save** button to save the information.

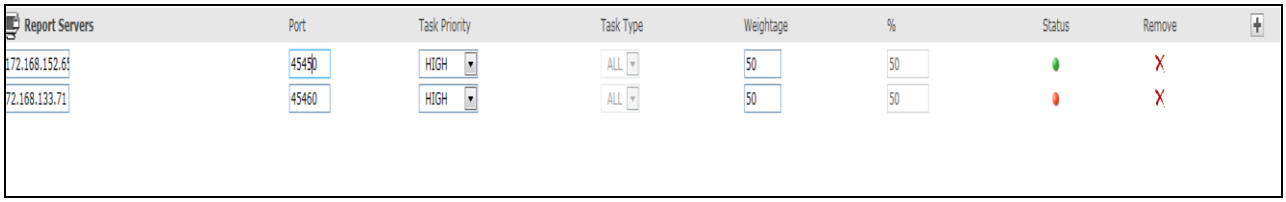

Figure 48: Adding a server in cluster

Details on Report Servers tab

- **Report Servers:** IP of the server.
- **Port:** Port at which the server is running.
- **Task Priority:** Set a value among **High**, **Medium** and **Low**.
- **Task Type:** In present version of Intellicus is it set at **ALL** and cannot be changed.
- **Weightage:** A positive integer indicating the number of tasks (out of all the requests) that should be allocated to this server.
- **%:** Weightage is auto-converted into percent and placed here.
- **Status:** A red icon indicates that that the server is presently down. A green icon indicates that the server is presently up.
- **Remove:** Click the button to remove this server.

Changing properties of server

To change any of the information, replace the existing values with new values for a server and click **Save** button.

Removing a server

1. Click the button on respective server row.
2. To proceed with the deletion, click **OK**.
3. Click **Save**.

Selected server is removed.

Load Balancers

You can do following activities related to load balancers:

- Add a load balancer
- Remove a load balancer
- Change load balancer properties

Adding a load balancer

1. Click icon appearing on the right side of the tab header.
2. Specify values in the empty row that is added at the end of the list.
3. Click **Save** button to save the information.

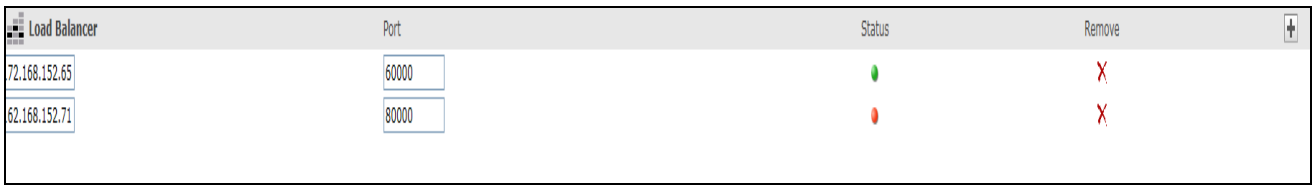

Figure 49: Adding a Load Balancer

Details on Load Balancer tab

- **Load Balancer:** IP of load balancer.
- **Port:** Port at which the load balancer is running.
- **Status:** A red icon indicates that that the load balancer is presently down. A green icon indicates that the load balancer is presently up.
- **Remove:** Click the button to remove this load balancer.

Changing properties of load balancer

To change any of the information, replace the existing values with new values for a load balancer and click **Save** button.

Deleting load balancer

1. Click the button on respective load balancer row.
2. To proceed with the deletion, click **OK**.
3. Click **Save**.

Selected load balancer is removed.

Settings

These settings are applicable to all Load balancers and Cluster nodes. The values set here decides the way load balancing will take place in this deployment.

Figure 50: Settings on Cluster page

Details on Settings tab

- **Server Health Refresh Rate:** The time interval after which primary load balancer will check if all the servers are in running state or not and the load that they are handling.
- **Load Balancer Refresh Rate:** The time interval after which load balancer will check if all the load balancers are up or not.
- **Servers: At:** Check this check box and select *Exact Priority* to allocate tasks set for respective server. Select *Upto Priority* to allocate tasks set for the set category and higher.
- **Weightage: Use:** Select this checkbox and select *Specified Weight Only* to allocate tasks as per set weightage. Select *Server Health Only* to allocate tasks based on server health (actual load on respective server).
- **Allocation:** Select the way tasks should be allocated to servers. Select *Random* to allocate tasks as per random logic. Select *Round robin* scheduling to allocate tasks one by one to servers.

After making changes click **Save** button to save the changes.

Upgrade Cluster from 5.x to 7.x

The upgrade process consists of 3 steps:

1) Backup required files and folders
2) Un-install previous version of Cluster
3) Install and start new version of Cluster

Note that you must take full backup of Intellicus Cluster installation folder and of the Intellicus repository database before starting step 2. Intellicus repository database stores all the reports, query objects and other user preference information.

Uninstall process retains few files, and does not delete them unless specifically mentioned in respective install document.

Ensure that newly installed Intellicus Cluster points to the same old repository database as its repository. During its first boot up, the new version of Intellicus report server automatically upgrades the repository schema and also upgrades all the objects to makes them compatible with new Intellicus Cluster. This is a non-reversible action. In case you decide to go back to previous version you must use the backed up repository database.

Backup System Files

License

Intellicus license is placed at

<installation folder>\IntellicusCluster\ClusterReportEngine\bin\

When you upgrade to new major you will need to upgrade your license too. You may need to send your old license to your Intellicus sales representative to request a new upgraded license file.

Connection Configurations

Intellicus connection configurations file encr_reportengine.dat is placed at

<installation folder>\IntellicusShared\ReportEngine\Config\

Do not over write this file during installation or restore from your backup. Using the old file report server will connect to all the databases that were configured earlier.

In case this file reportengine.dat file (apart from encr_reportengine.dat) exists in the same folder you must delete and destroy reportengine.dat for data security purposes.

Backup Folders and Files

The following folders and files should be backed up for any case of recovery. Each folder location and purpose of the files is mentioned below. There are no changes in these folders unless specified.

RPG

Purpose: Retains all saved report snapshots

Path: <installation folder>\IntellicusShared\ReportEngine\rpg

DATA

Purpose: Retains H2 database content. In case repository is set to HSQLDB or H2, then this folder contains all your repository content including reports and query object definitions.

Path: <installation folder>\IntellicusShared\ReportEngine\data

MAILS

Purpose: Stores mailer templates

Path: <installation folder>\IntellicusShared\ReportEngine\mails

ADHOC TEMPLATES

Purpose: Stores Ad hoc template files

Path: <installation folder>\IntellicusShared\ReportEngine\templates\adhoc

REPORT ENGINE PROPERTY FILE

Purpose: Stores Report Server Boot Up Configurations

Path: <installationfolder>\IntellicusShared\ReportEngine\config\reportengine.properties

Method: Take a backup of previous version reportengine.properties. Installing new Intellicus Cluster allows it to overwrite this file.
Merge the property values of which you have made any changes specifically in your installation.

LANGUAGE BUNDLES

Path: IntellicusPortal\Jakarta\webapps\intellicus\client\lang

File: You may need to merge your customized en_US.xls entries into the newly

installed file.

CONFIGURATION FILES

Purpose: Configuring behaviour of respective areas

Extended Input Validation configuration

Path: <installation folder>\IntellicusShared\ReportEngine\config

Backup these files, if exists, in case you have customized this file

File:
exin_validations.xls

Formatting

Path: <installation folder>\IntellicusShared\ReportEngine\config

Backup these files, if exists, in case you have customized this file

File:
formatmapping.xls

Database mapping

Path: <installation folder>\IntellicusShared\ReportEngine\config

Uninstall Intellicus Cluster 5.x

Windows

Here are the steps to uninstall Intellicus Cluster 5.x installed on Windows:

Stop Intellicus Cluster services

Stop Cluster Report Server and Web Portal from All Programs > Intellicus> IntellicusCluster.
Next click Uninstall Cluster Report Server.

You also need to uninstall Shared Report Server from Control Panel > Programs and Features.

Delete files and folders

Files

Uninstall program may not delete some of the files and folders. Delete following files:

For Windows XP / Windows 2003:

- C:\WINDOWS\system32\IntellicusEngineService.exe
- C:\WINDOWS\system32\IntellicusEngineService.ini

For Windows 2000:

- C:\WINNT\system32\IntellicusEngineService.exe
- C:\WINNT\system32\IntellicusEngineService.ini

Folders

- **IntellicusPortal\Jakarta** folder contains old compiled class files and old tomcat server. If this folder is not removed, Intellicus may continue using old files to give un-expected results or errors.

  Delete **IntellicusPortal\Jakarta** folder. Path of this folder is:

  <installation folder>\IntellicusPortal\Jakarta\

- **IntellicusPortal\jre** folder contains java runtime. If this folder is not removed, Intellicus may continue using old files to give un-expected results or errors.

Delete **IntellicusPortal\jre** folder, if exists. Path of this folder is:

<installation folder>\IntellicusPortal\jre\

- **IntellicusCluster\ReportEngine** folder contains old log files and other property files. If this folder is not removed, Intellicus may give un-expected results or errors.

  Delete **IntellicusCluster\ReportEngine** folder. Path of this folder is:

  <installation folder>\IntellicusCluster\ClusterReportEngine\bin\

Install Intellicus Cluster 7.x

Steps to Install Intellicus Cluster are provided in this document under section "Installation and Configuration".

Restore 5.x configurations

After installing Intellicus Cluster 7.x, take these steps to re-apply old Intellicus Cluster custom configurations.

Note: Please stop Cluster Report Server and Web Portal before restoring the configuration.

Restoration points and Restore types

Configuration/File	Type of restoring
Encr_reportengine.dat	Restore old file
RPG folder	Restore old folder
Data folder	Restore old folder (See warnings below)
Mails	Restore old folder
Template files	Merge custom changes into newly installed templates (See warnings below)
Resource bundler files	Merge custom changes into newly installed bundler files (See warnings below)
ReportEngine.properties	Merge custom changes into newly installed report engine properties file
CategoryPropertiesInfo.xml	Ensure Newly installed file prevails
QOPropertiesInfo.xml	Ensure Newly installed file prevails
ReportPropertiesInfo.xml	Ensure Newly installed file prevails
exin_validations.xls	Merge custom changes into newly installed validations file

FormatMapping.xls	Merge custom changes into newly installed format mapping file
databasemapping.xls	Merge custom changes into newly installed database mapping file
ReportClient.properties	Merge custom changes into newly installed report client properties file

Replace the contents of "data" folder

Place the backed up contents of "data" folder at path:

Windows

<installation folder>\IntellicusShared\ReportEngine\data

Replace the modified template files

Templates files are available at path (on server):

Windows

<installation folder>\IntellicusShared\ReportEngine\templates\adhoc

Restoring resource bundles

Restore the resource bundles folder at following location:

Windows

This folder is placed at path:

<installation folder>\IntellicusShared\ReportEngine\

Restoring en_US.xls

If you have modified "en_US.xls" language bundler file then you need to merge those changes in latest language bundler file present at path:

Windows

This folder is placed at path:

IntellicusPortal\Jakarta\webapps\intellicus\client\lang

Start new Intellicus Cluster

Windows

To start Cluster Report Server, click Start > All Programs > Intellicus > IntellicusCluster and then click respective shortcut.

To start Web Portal, click Start > All Programs > Intellicus > IntellicusPortal and then click respective shortcut.