



PowerScribe[®] 360 | Reporting

Montage Installation Manual



**The latest version of this manual is available from the
Oracle iSupport Library on Solution 16914.**

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MONTAGE IMPLEMENTATION FOR POWERSCRIBE 360 | REPORTING 1

Upgrading

Before starting the upgrade, ensure that the PostgreSQL data drive or partition has sufficient free space (e.g. not 90% full).

A database backup is highly recommended prior to upgrade.

Do not use the Nuance SQL user account to configure the Montage Crawler. Before upgrading Montage, a Microsoft SQL account on the system database server with access to the COMM4 database is required to access the Montage Crawler.

Prior to any upgrade, the FE must obtain the License files from the assigned Nuance PM for the project.

If Montage is installed, you must upgrade the Montage server to the latest Nuance approved version.

You need access to <https://stats.montagehealthcare.com/upload>.

Create Montage User in COMM4 Database

Run this SQL Script against the master database where Comm4 database resides.

This script will create a specific account for Comm4 read-only access for Montage Crawler Services.

```
-----  
USE [master]  
GO  
CREATE LOGIN [Montage] WITH PASSWORD=N'M0nt@g3!',  
DEFAULT_DATABASE=[master], CHECK_EXPIRATION=OFF,  
CHECK_POLICY=OFF  
GO  
USE [Comm4]  
GO  
CREATE USER [Montage] FOR LOGIN [Montage]  
GO  
USE [Comm4]  
GO  
EXEC sp_addrolemember N'db_datareader', N'Montage'  
-----
```

Download Software

Download the Montage software only from the DML. DO NOT download software from the Montage support site.

PostgreSQL 9.1.9

Due to CVE-2013-1899, existing Montage installations on Windows, must upgrade their PostgreSQL installations from 9.1.1 to 9.1.9.

It is suggested, though not required, to back up the PostgreSQL database before proceeding. Since it is a minor point release, the PostgreSQL upgrade will upgrade the existing installation in place.

If upgrading from 2.5, run the standard upgrade process. On Windows, stop the Apache and Montage services, run the installer. The Command Prompt window will stay open while the migration and maintenance occurs. Do not kill the upgrade process once started, it may take significant time. Contact Montage Support if you are concerned it is stalled (the install.log file in the installation directory contains additional details). Once complete, start the services as normal.

Run Windows Disk De-fragmentation on any disks that have high fragmentation levels to complete the maintenance tasks.

If upgrading from a release prior to 2.5, you can directly upgrade to 3.0, but be sure to read the notes and extra steps in the intermediate Changelog entries, e.g. the 2.5 Upgrade.

This section contains items to check prior to installation and post installation for the Nuance PowerScribe 360 | Reporting implementations.

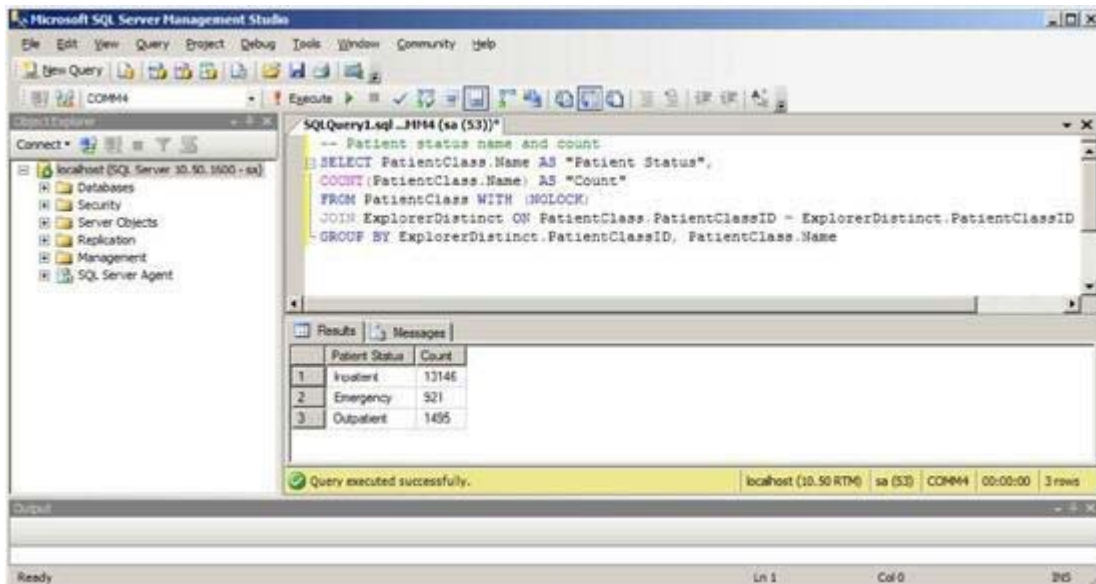


You need access to <https://stats.montagehealthcare.com/upload>.

PS360 COMM4 DB Analysis

The following queries must be run against the PS360 COMM4 database and the results provided to the project manager. The PM will then use this information and assist the Client in determining how the DB Crawler should be configured.

The SQL query below should be executed in Microsoft SQL Server Management Studio, and the results given to the PM.



If necessary, you can run the individual queries located under the explanations of their purpose, individually.

Consolidated Query

Before running this query, set SQL management Studio to send the output to a file.

```
use comm4
go
print 'Site Vs SiteLocation'

SELECT Name AS "Site" FROM Site WITH (NOLOCK);
SELECT Name AS "Site Locations" FROM SiteLocation WITH (NOLOCK);

print 'Patient Status, Name and Count'

SELECT PatientClass.Name AS "Patient Status",
       COUNT(PatientClass.Name) AS "Count"
FROM PatientClass WITH (NOLOCK)
JOIN ExplorerDistinct ON PatientClass.PatientClassID =
ExplorerDistinct.PatientClassID
GROUP BY ExplorerDistinct.PatientClassID, PatientClass.Name

print 'Available modalities'

SELECT COUNT(Name) AS "Order Count",
       Name AS "Modality Name"
FROM ProcedureModality WITH (NOLOCK)
JOIN OrderProcedure
WITH (NOLOCK) ON OrderProcedure.ProcedureCodeID =
ProcedureModality.ProcedureCodeID
GROUP BY ProcedureModality.Name
ORDER BY ProcedureModality.Name

print 'Modality to Exam Mappings'

SELECT ProcedureModality.Name AS "Modality",
       Explorer.Procedures AS "Exam Code",
       ProcedureDesc AS "Exam Description"
FROM Explorer
JOIN OrderProcedure ON OrderProcedure.OrderID = Explorer.OrderID
JOIN ProcedureModality ON ProcedureModality.ProcedureCodeID =
OrderProcedure.ProcedureCodeID
WHERE Procedures IS NOT NULL AND ProcedureDesc IS NOT NULL
GROUP BY ProcedureModality.Name, Explorer.Procedures,
Explorer.ProcedureDesc

print 'All ordering and reporting providers'

SELECT PersonalInfo.LastName AS "Last Name",
       PersonalInfo.FirstName AS "First Name"
FROM "Order" WITH (NOLOCK)
JOIN Physician WITH (NOLOCK) ON Physician.PhysicianID =
"Order".ProviderPhysID
```



```
JOIN PersonalInfo WITH (NOLOCK) ON PersonalInfo.PersonalInfoID =
Physician.PersonalInfoID
WHERE "Order".ProviderPhysID IS NOT NULL
GROUP BY PersonalInfo.LastName, PersonalInfo.FirstName
ORDER BY PersonalInfo.LastName
```

```
SELECT SignerLastName AS "Last Name",
       SignerFirstName AS "First Name"
FROM ExplorerDistinct WITH (NOLOCK)
WHERE SignerLastName IS NOT NULL
GROUP BY SignerLastName, SignerFirstName
ORDER BY SignerLastName
```

print 'Possible duplicate ordering providers'

```
SELECT COUNT(DISTINCT "Order".ProviderPhysID) - 1 AS "Possible
Duplicates",
       PersonalInfo.LastName AS "Last Name",
       PersonalInfo.FirstName AS "First Name"
FROM "Order" WITH (NOLOCK)
JOIN Physician WITH (NOLOCK) ON Physician.PhysicianID =
"Order".ProviderPhysID
JOIN PersonalInfo WITH (NOLOCK) ON PersonalInfo.PersonalInfoID =
Physician.PersonalInfoID
WHERE "Order".ProviderPhysID IS NOT NULL
GROUP BY PersonalInfo.LastName, PersonalInfo.FirstName
HAVING COUNT(DISTINCT "Order".ProviderPhysID) > 1
ORDER BY PersonalInfo.LastName
```

print 'Possible duplicate reporting providers'

```
SELECT COUNT(DISTINCT SignerAcctID) - 1 AS "Possible Duplicates",
       SignerLastName AS "Last Name",
       SignerFirstName AS "First Name"
FROM ExplorerDistinct WITH (NOLOCK)
GROUP BY SignerLastName, SignerFirstName
HAVING COUNT(DISTINCT SignerAcctID) > 1
ORDER BY SignerLastName
```

Query Explanations and Individual Queries

Listing Sites and SiteLocations

In some cases **SiteLocation** may be preferred over **Site** as described in *Site Vs SiteLocation*. The below query will assist in providing a list from both the **Site** and **SiteLocation** to simplify the decision making process.

```
-- Site Vs SiteLocation
SELECT Name AS 'Site' FROM Site WITH (NOLOCK);
SELECT Name AS "Site Locations" FROM SiteLocation WITH (NOLOCK);
```

Patient Status

Montage will need to be configured to map unrecognized patient statuses, if any exist. Please reference Patient Class for more information. The following query will assist in this decision making processes by listing all the patient statuses that have at least one reference in a report followed by the number of times that the status appears in all reports.

```
-- Patient status name and count
SELECT PatientClass.Name AS "Patient Status",
       COUNT(PatientClass.Name) AS "Count"
FROM PatientClass WITH (NOLOCK)
JOIN ExplorerDistinct ON PatientClass.PatientClassID =
ExplorerDistinct.PatientClassID
GROUP BY ExplorerDistinct.PatientClassID, PatientClass.Name
```

Patient Status	Count
Clinic	2000
Discharged	45
Emergency	999
Inpatient	4001

In the above SQL Results, we find that there two unrecognized patient statuses that need to have a mapping defined for them.

List Modalities

The following query can be used to identify modalities that are less common and may need to be clarified by the customer.

```
-- Available modalities
SELECT COUNT(Name) AS "Order Count",
       Name AS "Modality Name"
FROM ProcedureModality WITH (NOLOCK)
JOIN OrderProcedure
WITH (NOLOCK) ON OrderProcedure.ProcedureCodeID =
ProcedureModality.ProcedureCodeID
GROUP BY ProcedureModality.Name
ORDER BY ProcedureModality.Name
```

The above query will return a list of the modalities which are recognized by this customer's PS360 installation. At the customer's discretion, its possible to map unwanted, legacy, or duplicate modalities to another more common modality such as CR, CT, MR, US, XA, DF, NM, PT, and MG.

In the below SQL results, modalities CT and US are commonly recognized modalities and are according to Order Count are used more frequently at this customer site. However, US-procedure and US-duplex can be considered duplicates of the more common US. Since US appears far more frequently, it might make sense to consolidate the other modalities into UT.

Order Count	Modality
1000	CT
1050	US
39	US - Duplex
60	US - Procedure

In this next example, MR and MRI both exist as modalities, but its likely that they can be merged into a single modality. Since MR appears more frequently, it might be safe to assume MRI can be mapped to MR. The same situation exists for CTA and Angiography, which in many cases could simply be reduced to CT.

Order Count	Modality
40	Angiography
3000	CT
500	CTA
2040	MR
1000	MRI

Modality to Exam Mappings

For assistance with determining if the existing mappings from “Exam Code” to “Modality” are correct, use the following query.

```
SELECT ProcedureModality.Name AS "Modality",
       Explorer.Procedures AS "Exam Code",
       ProcedureDesc AS "Exam Description"
FROM Explorer
JOIN OrderProcedure ON OrderProcedure.OrderID = Explorer.OrderID
JOIN ProcedureModality ON ProcedureModality.ProcedureCodeID =
OrderProcedure.ProcedureCodeID
WHERE Procedures IS NOT NULL AND ProcedureDesc IS NOT NULL
GROUP BY ProcedureModality.Name, Explorer.Procedures,
Explorer.ProcedureDesc
```

Duplicate Providers

For both ordering and reporting providers, we want to identify records that are potential duplicates. Since its plausible that two or more providers have the same name, its still necessary to work with the customer to verify the possible redundancy. If a determination is made that the provider has a duplicate entry, it may be necessary to work with Montage Support to clean the data.

The following query will list all ordering and reporting providers.

```
-- All ordering and reporting providers
SELECT PersonalInfo.LastName AS "Last Name",
       PersonalInfo.FirstName AS "First Name"
FROM "Order" WITH (NOLOCK)
JOIN Physician WITH (NOLOCK) ON Physician.PhysicianID =
"Order".ProviderPhysID
JOIN PersonalInfo WITH (NOLOCK) ON PersonalInfo.PersonalInfoID =
Physician.PersonalInfoID
WHERE "Order".ProviderPhysID IS NOT NULL
GROUP BY PersonalInfo.LastName, PersonalInfo.FirstName
ORDER BY PersonalInfo.LastName

SELECT SignerLastName AS "Last Name",
       SignerFirstName AS "First Name"
FROM ExplorerDistinct WITH (NOLOCK)
WHERE SignerLastName IS NOT NULL
GROUP BY SignerLastName, SignerFirstName
ORDER BY SignerLastName
```

Duplicate Ordering Providers

The following query will list the number of possible duplications for each ordering provider.

```
-- Possible duplicate ordering providers
SELECT COUNT(DISTINCT "Order".ProviderPhysID) - 1 AS "Possible
Duplicates",
       PersonalInfo.LastName AS "Last Name",
       PersonalInfo.FirstName AS "First Name"
FROM "Order" WITH (NOLOCK)
JOIN Physician WITH (NOLOCK) ON Physician.PhysicianID =
"Order".ProviderPhysID
JOIN PersonalInfo WITH (NOLOCK) ON PersonalInfo.PersonalInfoID =
Physician.PersonalInfoID
WHERE "Order".ProviderPhysID IS NOT NULL
GROUP BY PersonalInfo.LastName, PersonalInfo.FirstName
HAVING COUNT(DISTINCT "Order".ProviderPhysID) > 1
ORDER BY PersonalInfo.LastName
```

Possible Duplicates	Last Name	First Name
1	Smith	John
1	Tudor	Henry
4	White	Jessica

The above results tell us that there are 2 ordering providers with a duplicate record and another with 4 duplicate records.

Duplicate Reporting Providers

The following query will list the number of possible duplications for each reporting provider referenced from in a report.

```
-- Possible duplicate reporting providers
SELECT COUNT(DISTINCT SignerAcctID) - 1 AS "Possible Duplicates",
       SignerLastName AS "Last Name",
       SignerFirstName AS "First Name"
FROM ExplorerDistinct WITH (NOLOCK)
GROUP BY SignerLastName, SignerFirstName
HAVING COUNT(DISTINCT SignerAcctID) > 1
ORDER BY SignerLastNam
```

Identify the Primary Active Accounts in PowerScribe

The following script is a data analysis script to identify the primary active accounts in PowerScribe:

```
Select a.AccountID, a.LoginName,  
IsNull(api.FirstName, '') 'FirstName',  
IsNull(api.LastName, '') 'LastName',  
Case When a.IsAdmin = 0 Then 'No' When a.IsAdmin = 1 Then 'Yes' End As 'Admin',  
Case When a.IsActive = 0 Then 'No' When a.IsActive = 1 Then 'Yes' End As 'Active',  
IsNull(r.Name, '') 'Role',  
IsNull(s.Name, '') 'Site',  
IsNull(sa.Identifier, '') 'RIS_ID' From Comm4..Account A (Nolock)  
Left Outer Join Comm4..SiteAccount sa (Nolock) On a.AccountID = sa.AccountID  
Left Outer Join Comm4..Role r (Nolock) On sa.RoleID = r.RoleID  
Left Outer Join Comm4..Site s (Nolock) On s.SiteID = sa.SiteID  
Left Outer Join Comm4..AccountPersonalInfo api (Nolock) On api .AccountID =  
a.AccountID  
And a.AccountID != 1
```

Application Installation

The client should provide the installing engineer a fully installed and configured WINDOWS server, which follows the guidelines in PN 889675, PowerScribe® 360 | Reporting Windows Server 2008 Installation and Configuration Manual, and PN 889676, PowerScribe® 360 | Reporting Windows Server 2012 Installation and Configuration Manual.

Do not use the Nuance SQL user account to configure the Montage Crawler. Before installing or upgrading Montage, a Microsoft SQL account on the system database server with access to the COMM4 database is required to access the Montage Crawler.

Prior to any installation, the FE must obtain the License files from the assigned Nuance PM for the project.

Always install the latest Nuance approved version of Montage software.

Download Software

Download the Montage software only from the DML. DO NOT download software from the Montage support site.

Windows Firewall

Clients must be able to access montage via the standard HTTP port 80 (and port 443 if using HTTPS). The customer's network must have any firewalls set to allow this. Additionally, set Window's Firewall to allow Inbound traffic to Apache via port 80 (and if needed 443). This can be done under Control Panel --> Check firewall status --> Advanced settings.

Dependencies

- Python
 - PostgreSQL
 - RabbitMQ
 - Apache HTTPD
 - Next Steps
-

Python

Montage is mostly written in the Python programming language. Similar to .NET applications, you must install the Python 2.7 runtime.

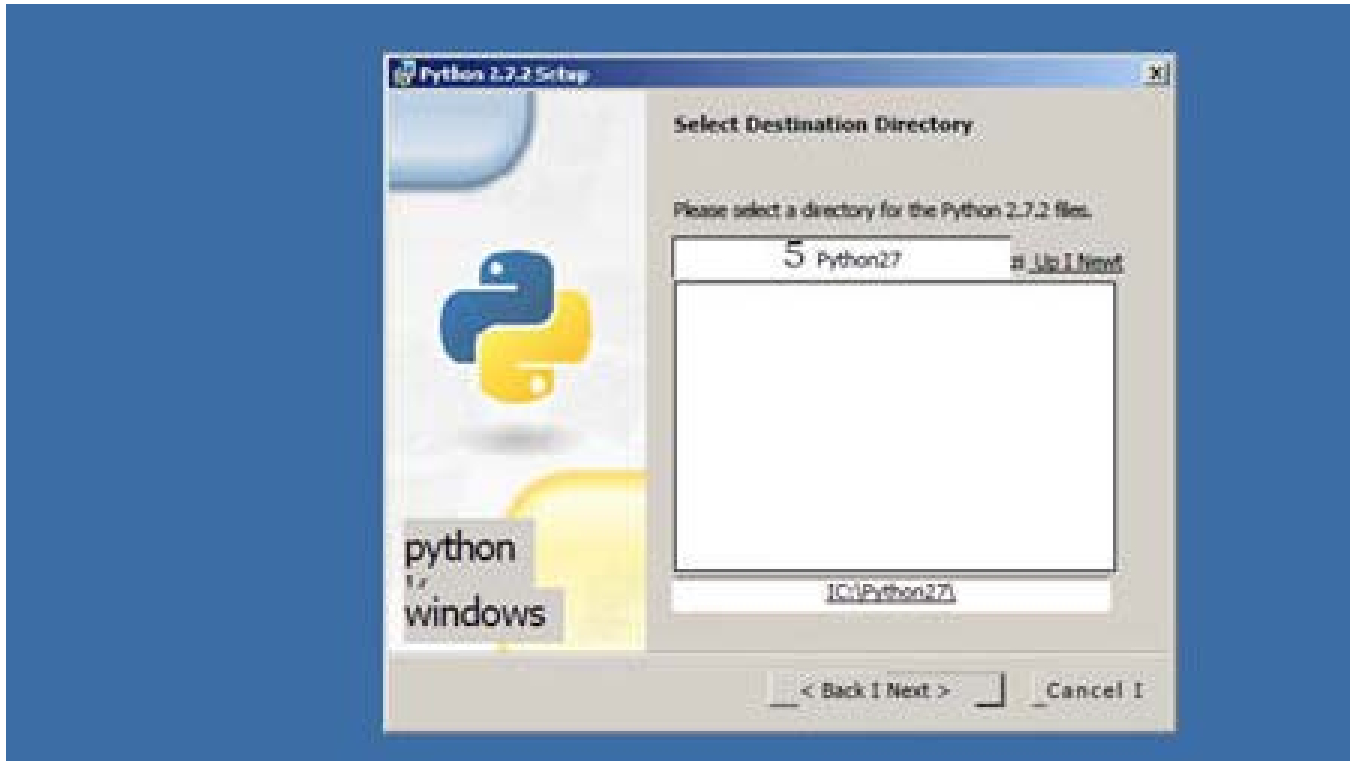
Run the installer, **python-2.7.2.msi**, accepting the defaults.

Select **Install for all users**, and click **Next**.

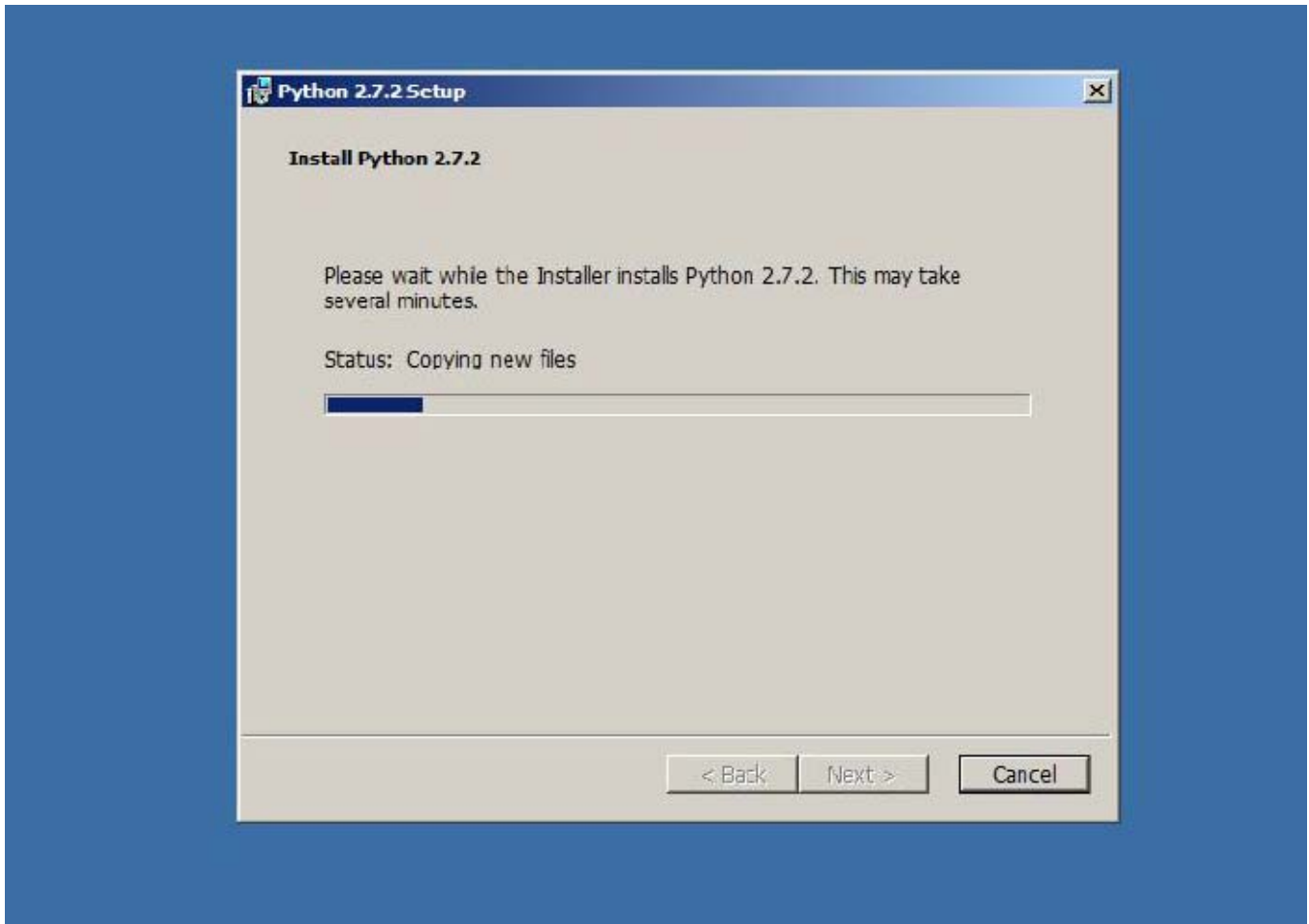


Install into C:\Python27, and click **Next**.

Warning: Due to how Montage is currently built, Python must be installed at C:\Python27.



Montage uses the default selection of Python features, click **Next**.



Python installs.

When the installation is finished, click **Finish**.



Note: Prior to Montage 2.4, several Python libraries had to be installed. As of Montage 2.4, these are now included as part of the montage-VERSION.exe installer.

If previously installed, you can safely remove these libraries under the Control Panel > Programs > Uninstall Program. Only remove:

- “Python 2.7 lxml-2.3.1”
- “Python 2.7 pycopg2-2.4”
- “Python 2.7 pyodbc-2.1.11”
- “Python 2.7 python-ldap-2.3.13”
- “Python 2.7 pywin32-217”

Do not remove “Python 2.7.x”.

PostgreSQL

Run the *PostgreSQL* installer, postgresql-9.1.9-1-windows.exe.

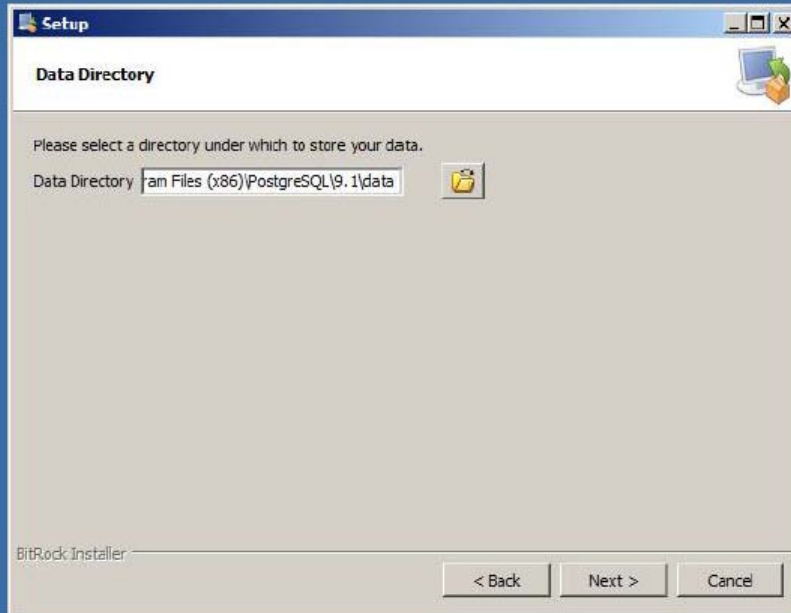
Click **Next** to start:



You can install PostgreSQL anywhere, the default is typically fine.



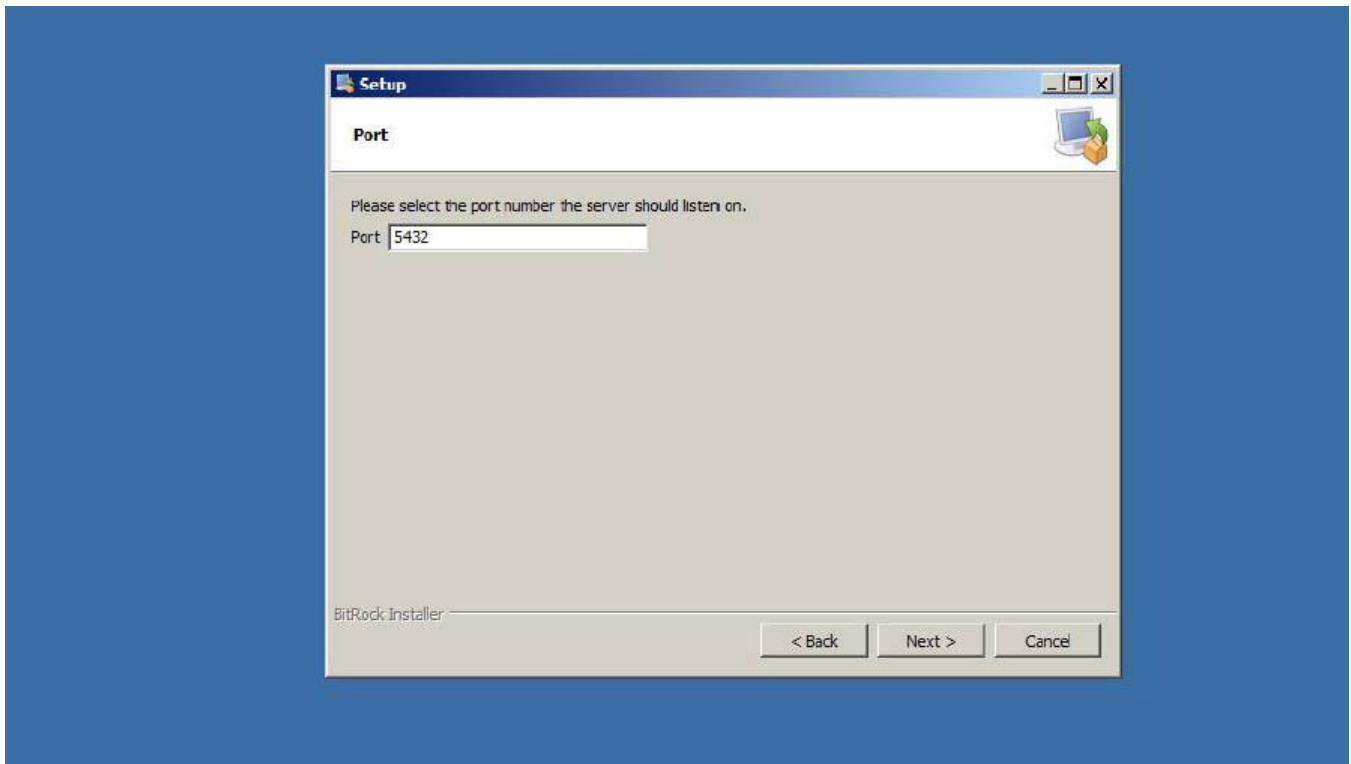
You can additionally place the PostgreSQL data files (the primary consumer of space), anywhere, such as on another drive. However, the default is acceptable.



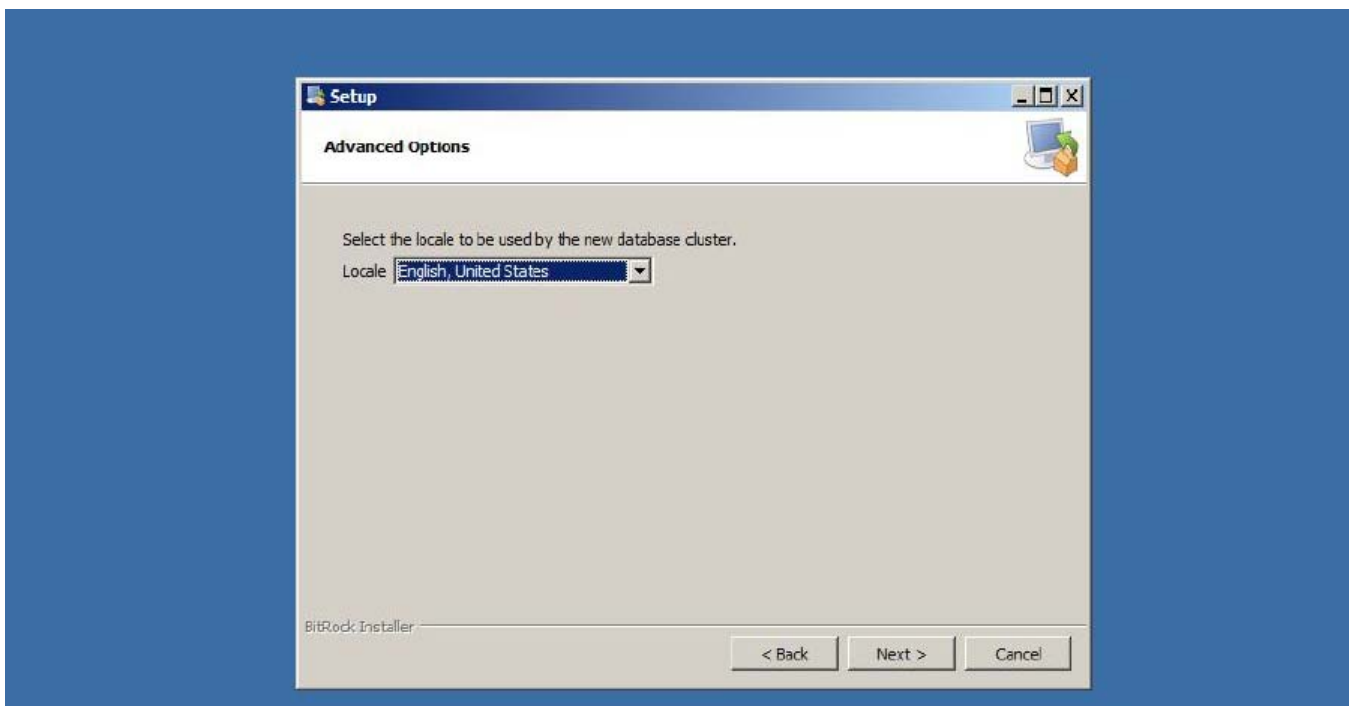
Set the Account name and password as instructed in P36A064.



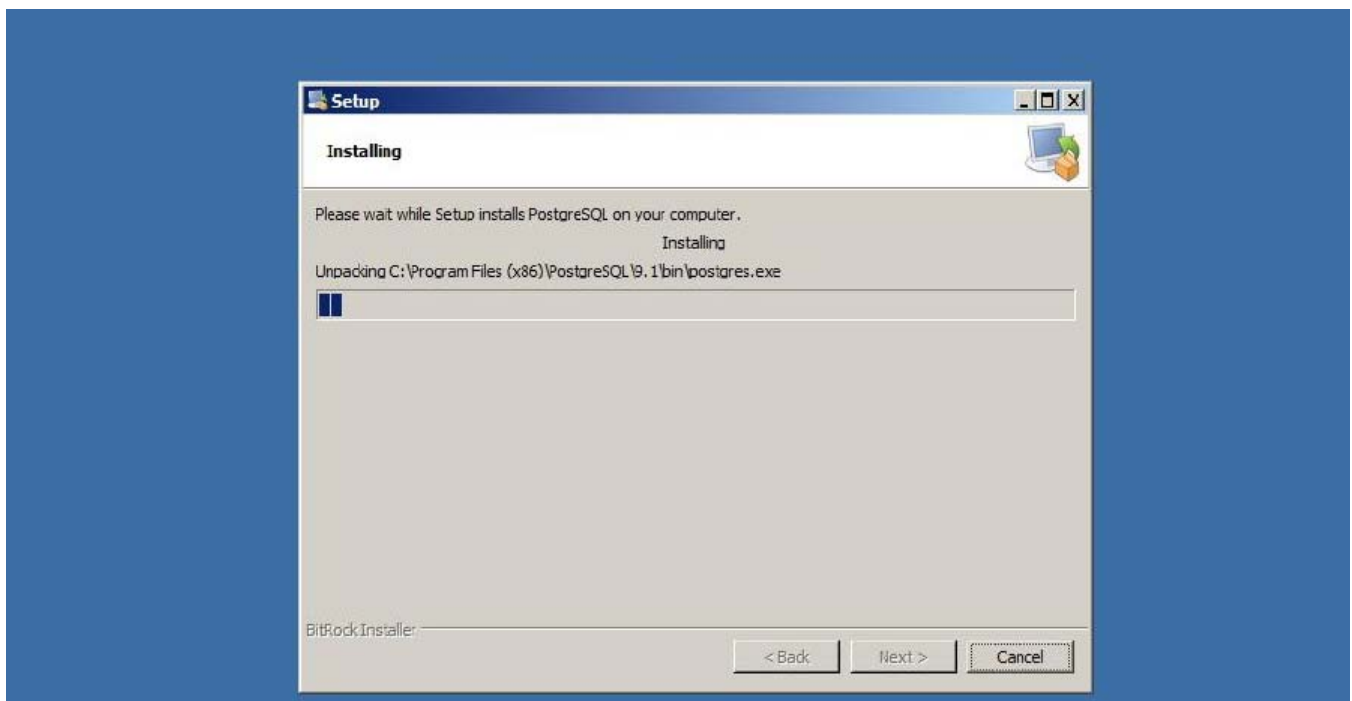
Use the default port 5432 (otherwise, Montage must be configured to point to non-default port):



Set the locale to *English, United States*:



Now ready to install, click **Next**.



Uncheck **Stack Builder**....., it does not add anything Montage requires.

Click **Finish** to exit the installer.



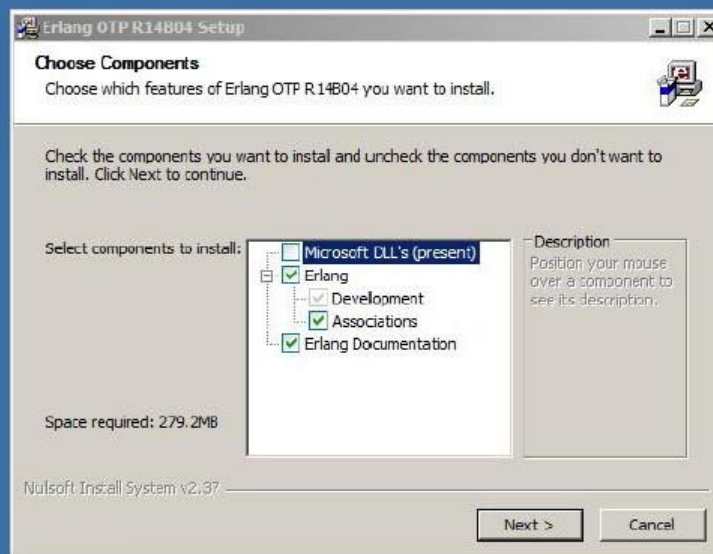
Continue to install **RabbitMQ**.

RabbitMQ

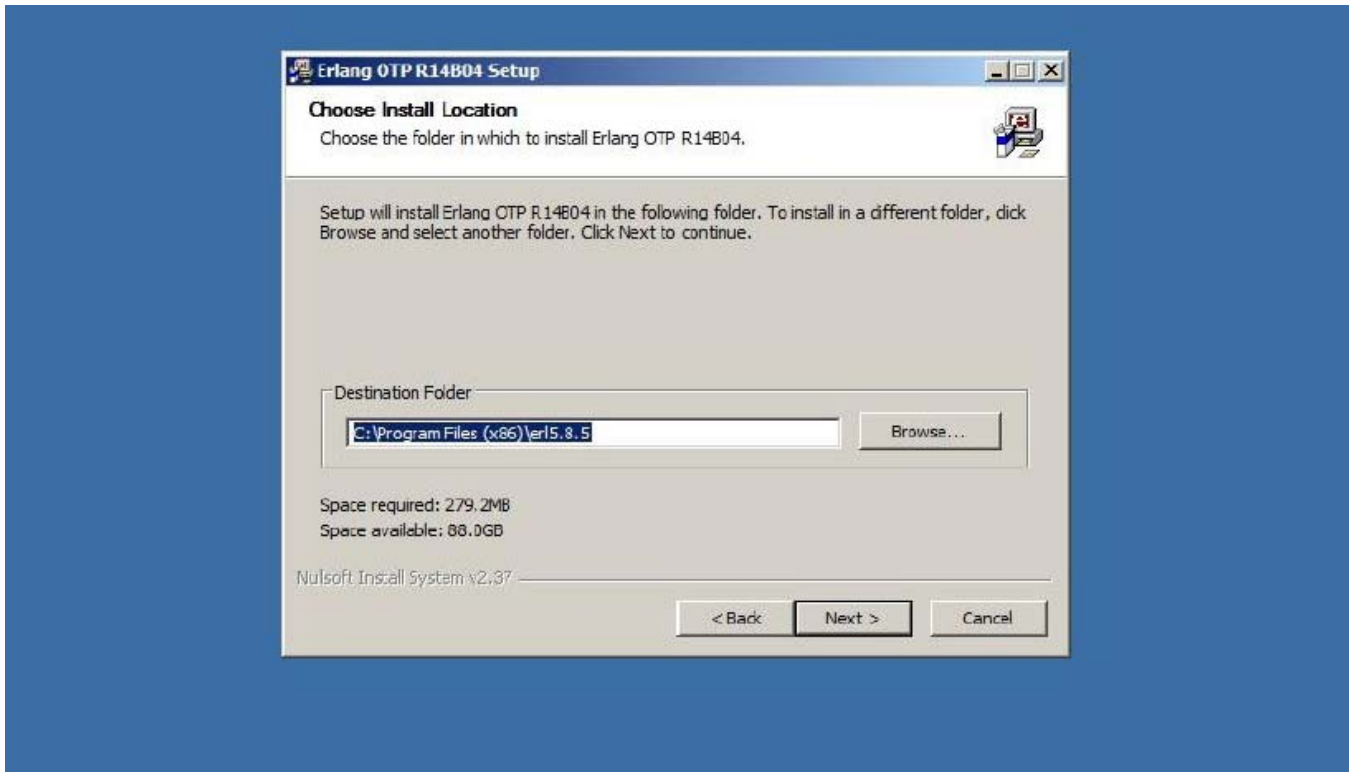
To install *RabbitMQ*, first install Erlang that is the runtime that RabbitMQ uses, by running **otp_win32_R14B04.exe**.

The default component selections are fine.

Click **Next**.



The default location is fine.



The location of the icons is not important, click **Next**.

The installer will run for several minutes.



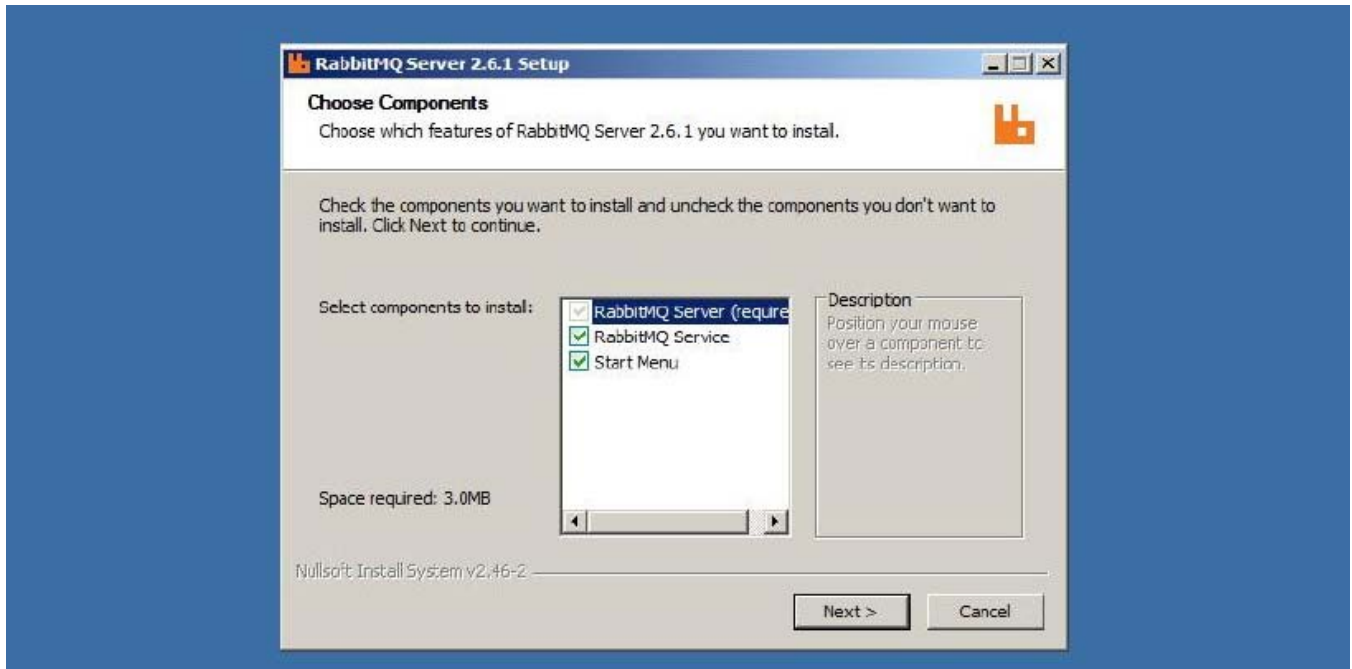
When the installation completes, click **Finish**.



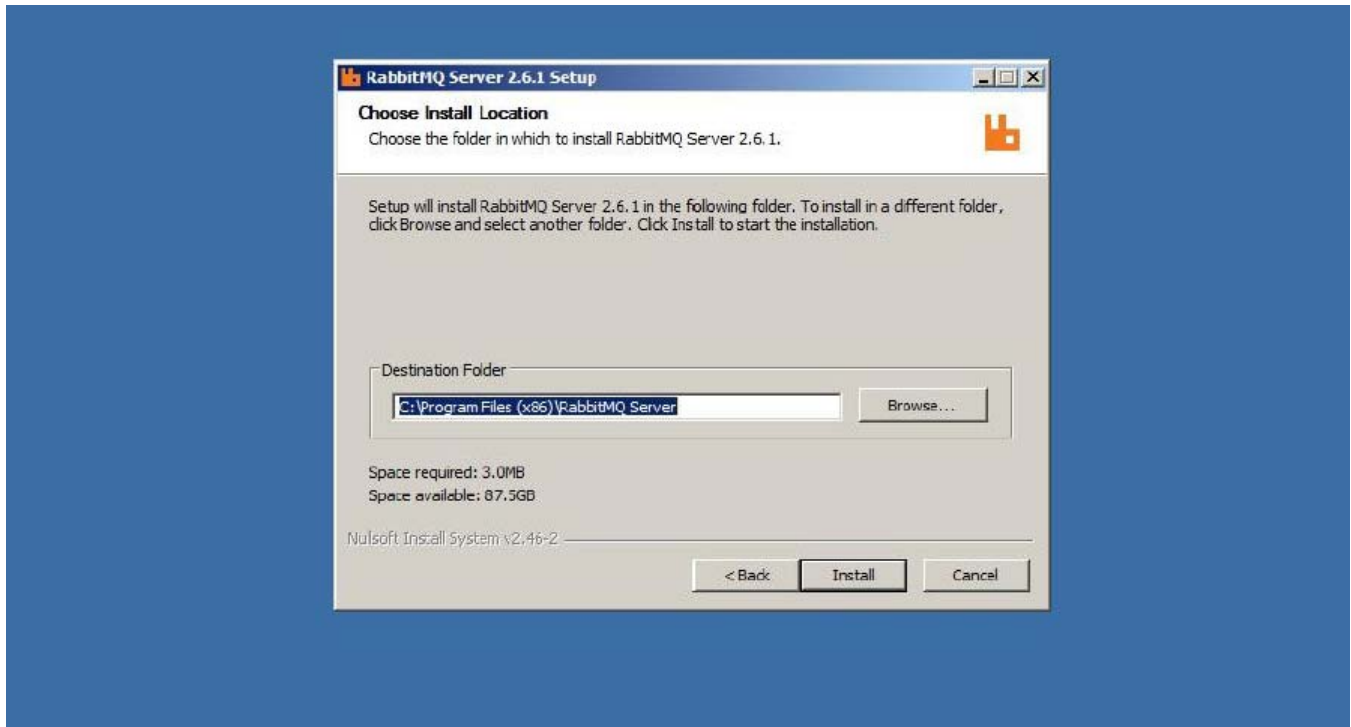
Next run the RabbitMQ installer, rabbitmq-server-2.6.1.exe.

The default component selection (including the “RabbitMQ Service”) is fine,

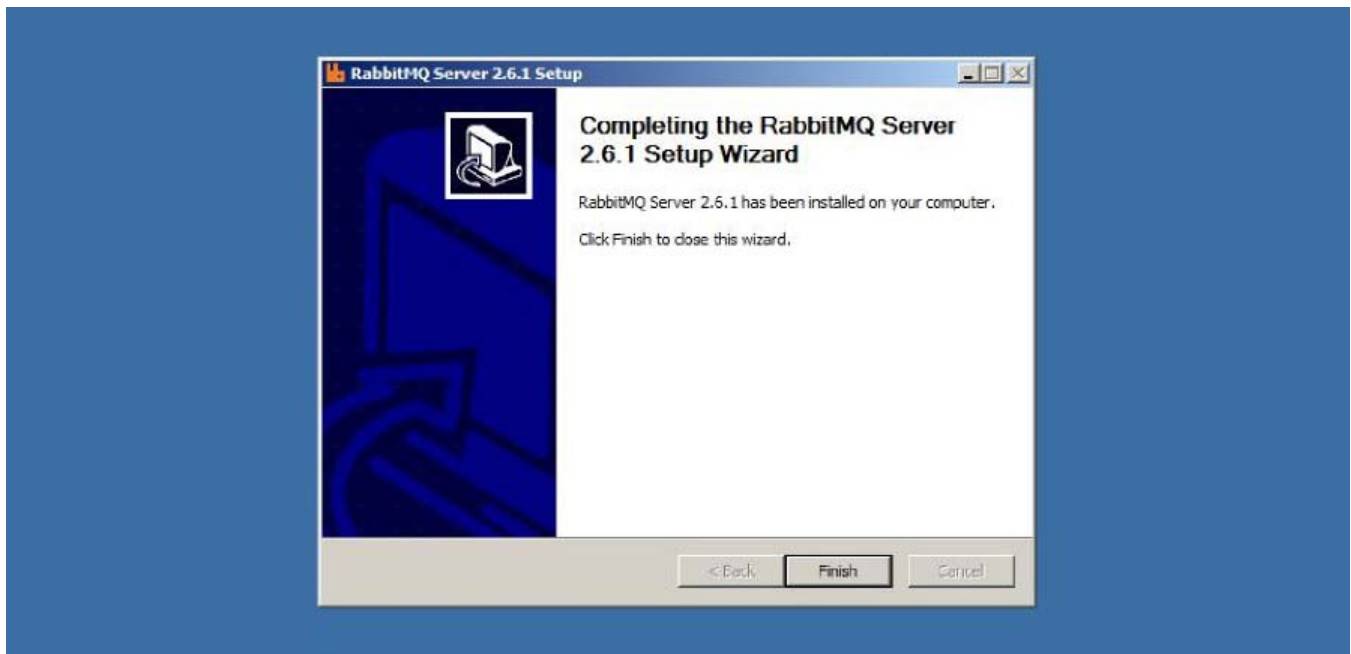
Click **Next** to start the installation.



The default location is fine:



The installer should take less than a minute to complete. Click **Finish**.



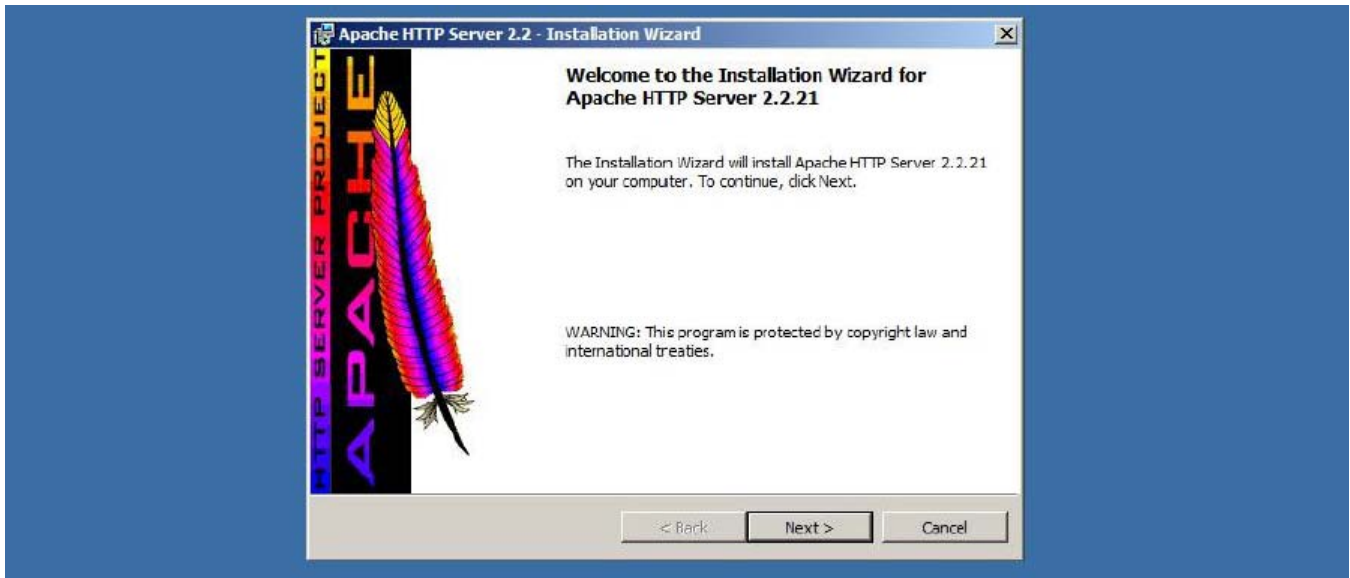
RabbitMQ runs as a Windows Service and requires no additional configuration.

Apache HTTPD

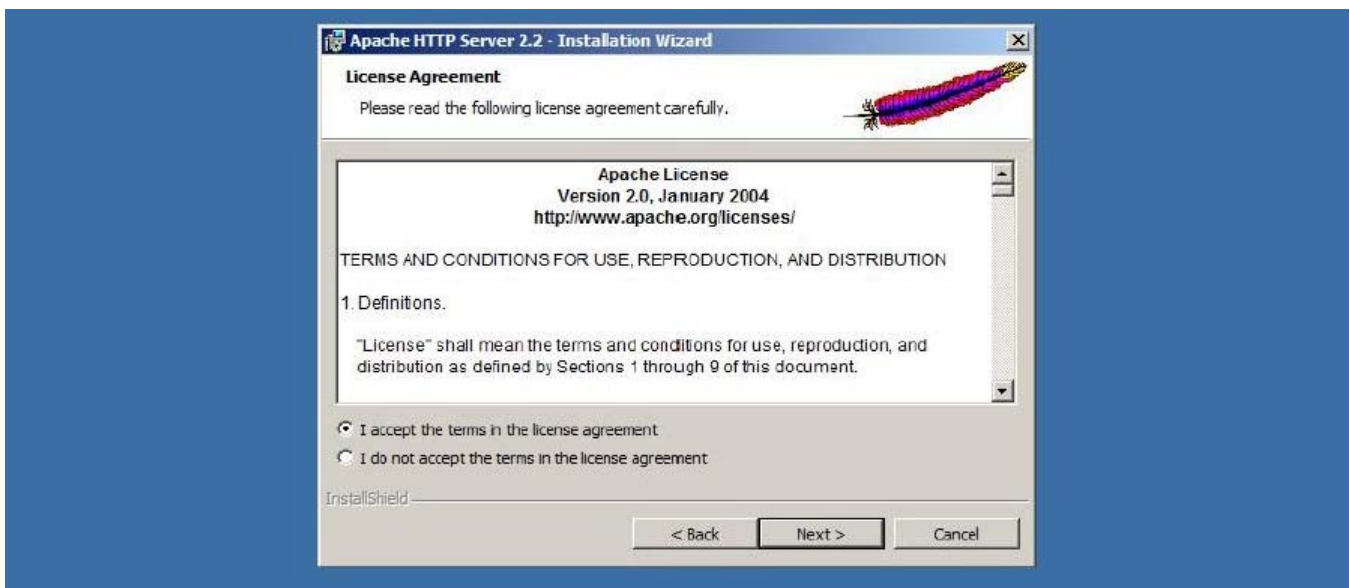
Warning: Apache HTTPD is an alternative webserver to Microsoft IIS. IIS must not be installed on the Montage server, or else it will cause Apache to be unable to bind to port 80 to host the Montage application.

Run the Apache installer, **httpd-2.2.21-win32-x86-openssl-0.9.8r.msi**.

Click **Next**.



Accept the license and click **Next**.



A description of Apache displays, click **Next**.



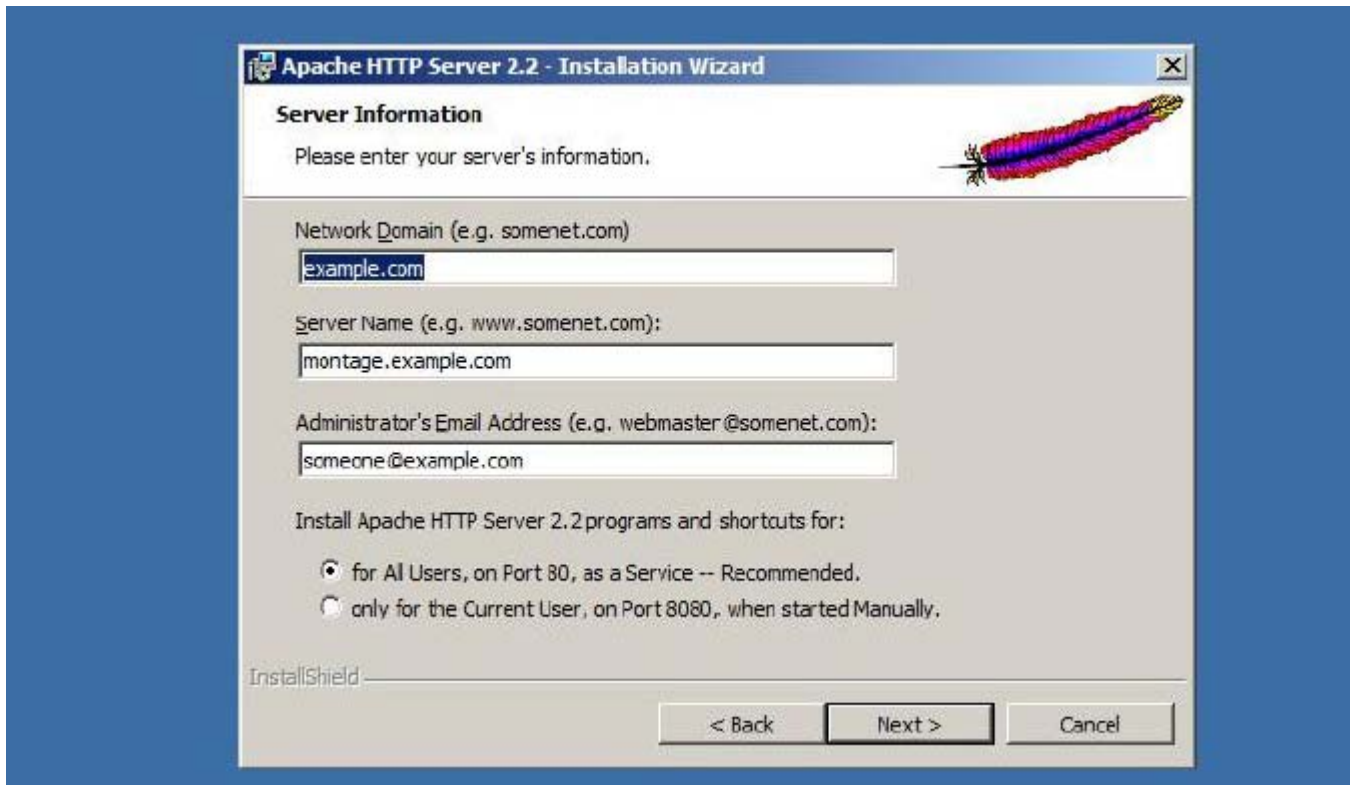
As part of the Pre-Install Checklist, you will have a domain name that the server will run as (e.g. montage.example.com).

Enter the top-level domain (e.g. example.com) for the Network Domain and the Montage domain (e.g. montage.example.com) for the Server Name.

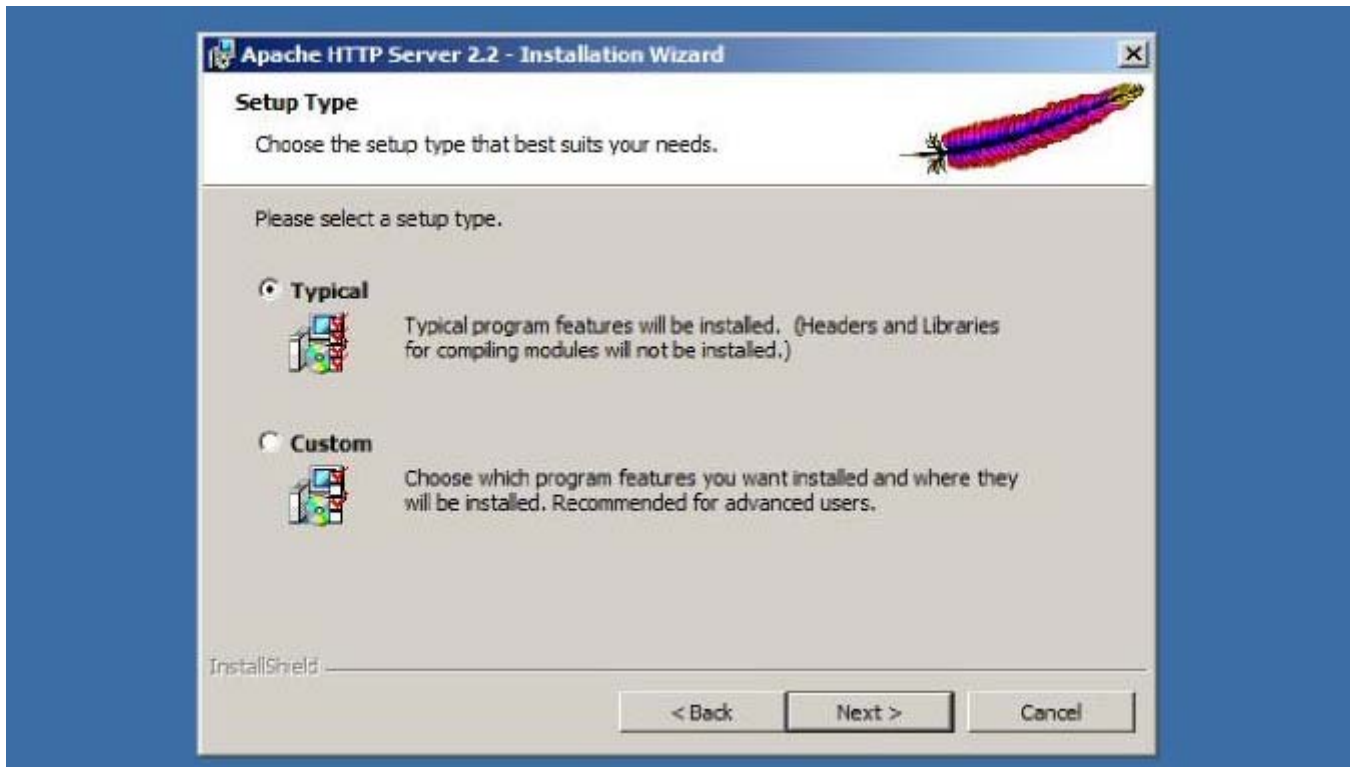
You may also enter an email address. This address will only ever be displayed if the server is improperly configured and Montage cannot load.

Check to install Apache **for All Users, on Port 80**.

Click **Next**.

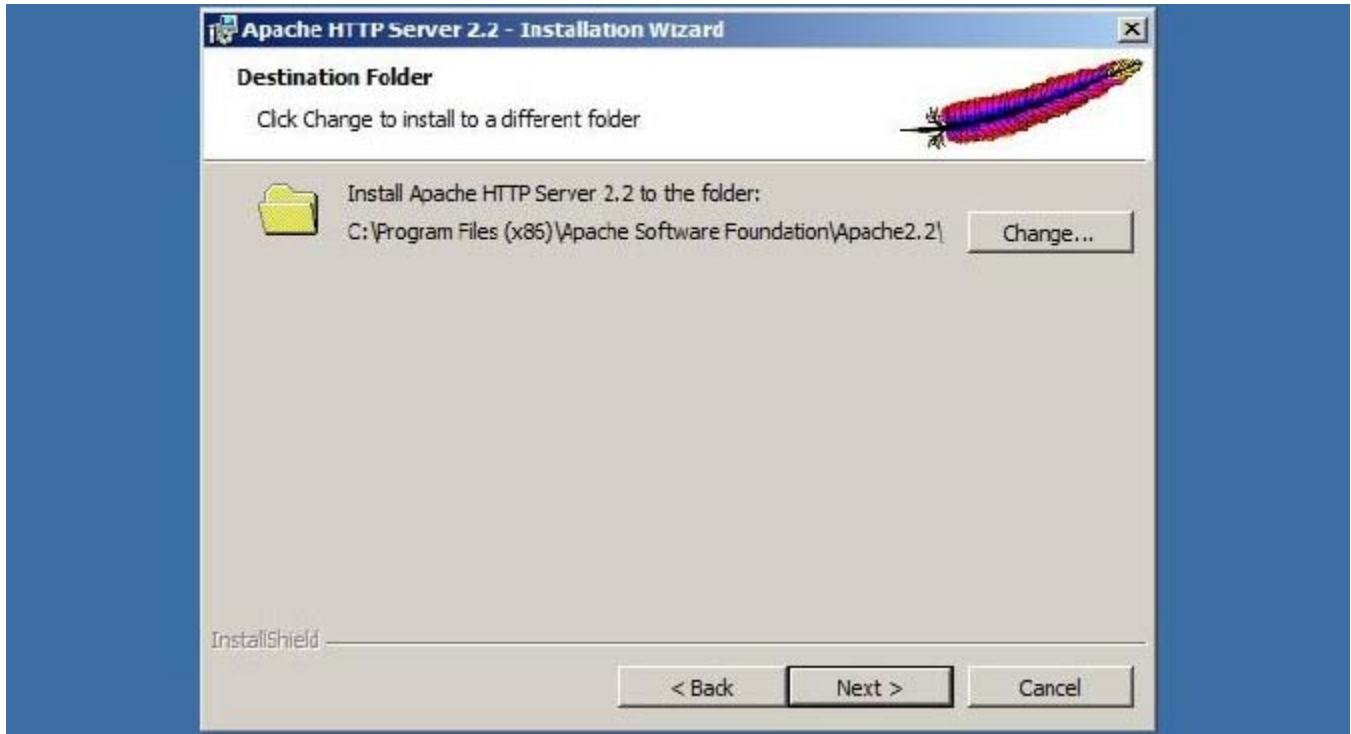


Select the **Typical** installation (The Apache development header files are not needed.), and click **Next**.

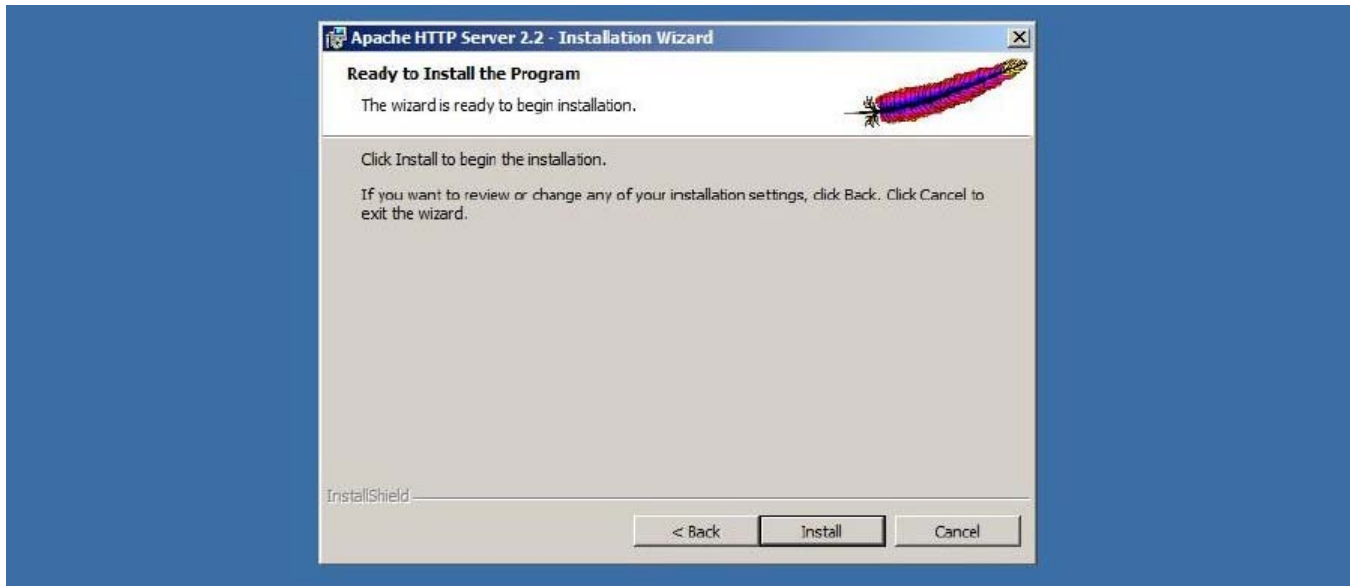


The default location is required. **Click Next.**

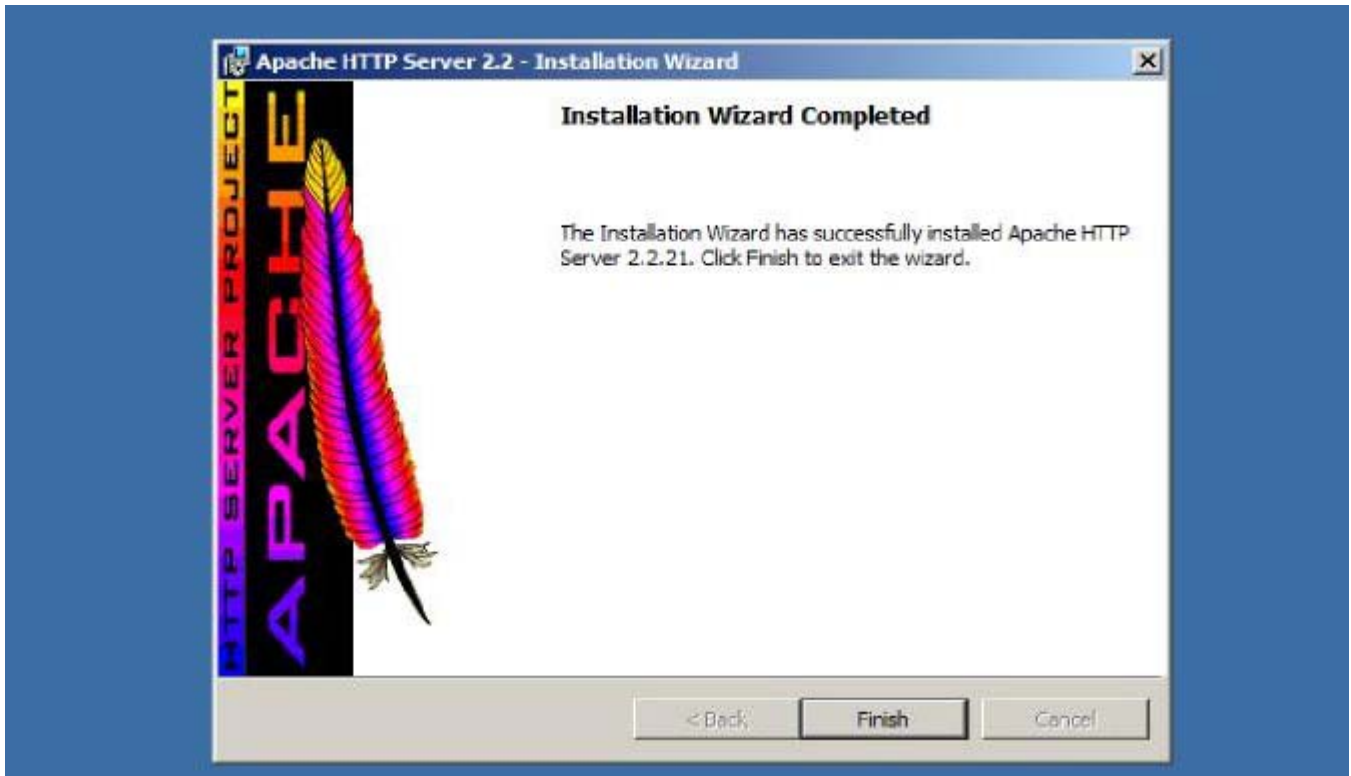
Warning: The Montage installer will automatically register itself with Apache, but requires that Apache is installed in this default location on C:\



Click **Install** to start the installation.



The install should take less than a minute, when completed, click **Finish**.



Apache will run as a Windows Service.

Initial Configuration

The Montage installer expects a certain level of configuration to exist before it is run, so that it can use these settings to set up the Montage installation.

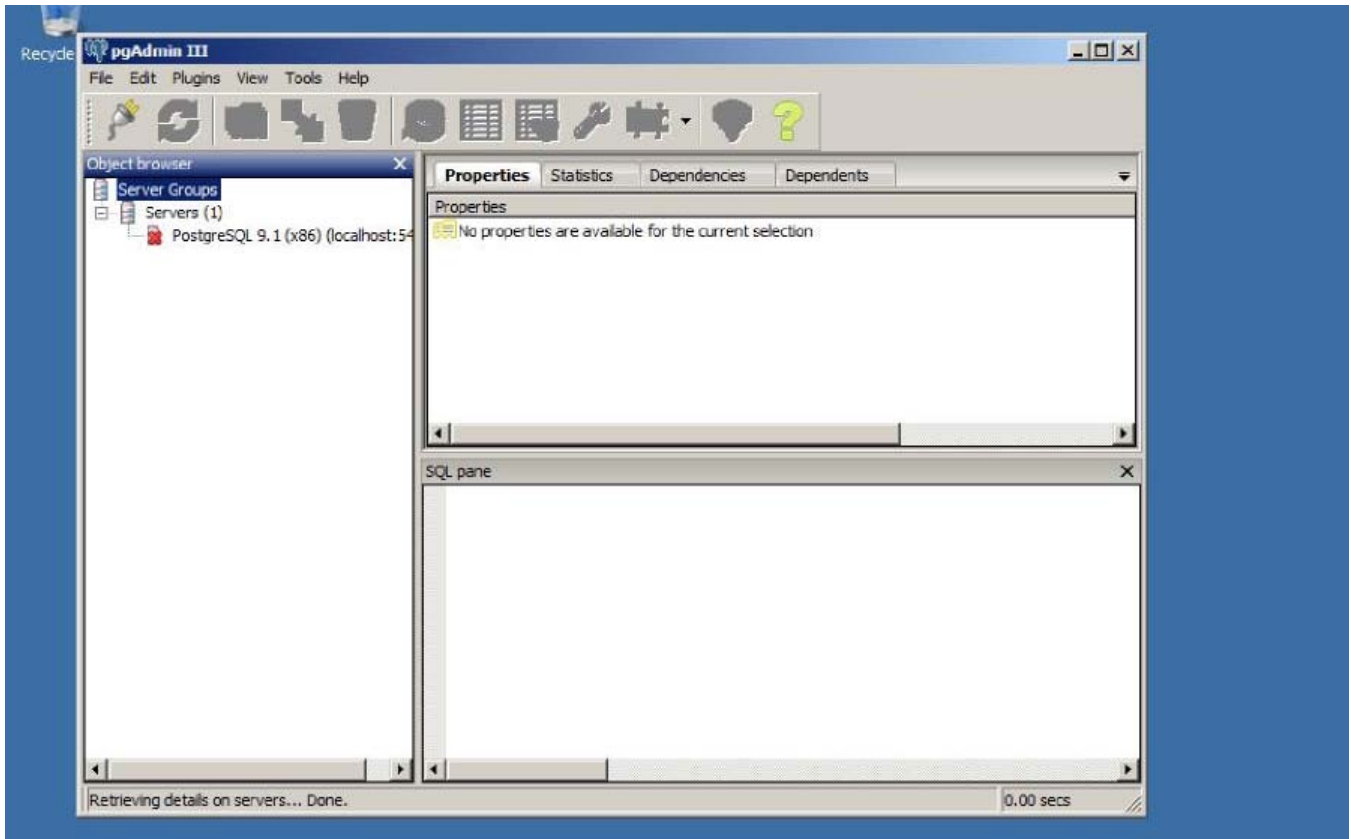
- Create the PostgreSQL User & Database
 - Montage Settings & License
 - ◆ montage-modules.json - License
 - ◆ settings.py - Main Config File
 - Windows Firewall
 - Next Steps
-

Create the PostgreSQL User & Database

The first item of configuration is to create a user and database in PostgreSQL for Montage to connect with and use.

You can use the command-line psql tool, but we will demonstrate using the GUI-based pgAdmin III tool, which was installed when we installed PostgreSQL.

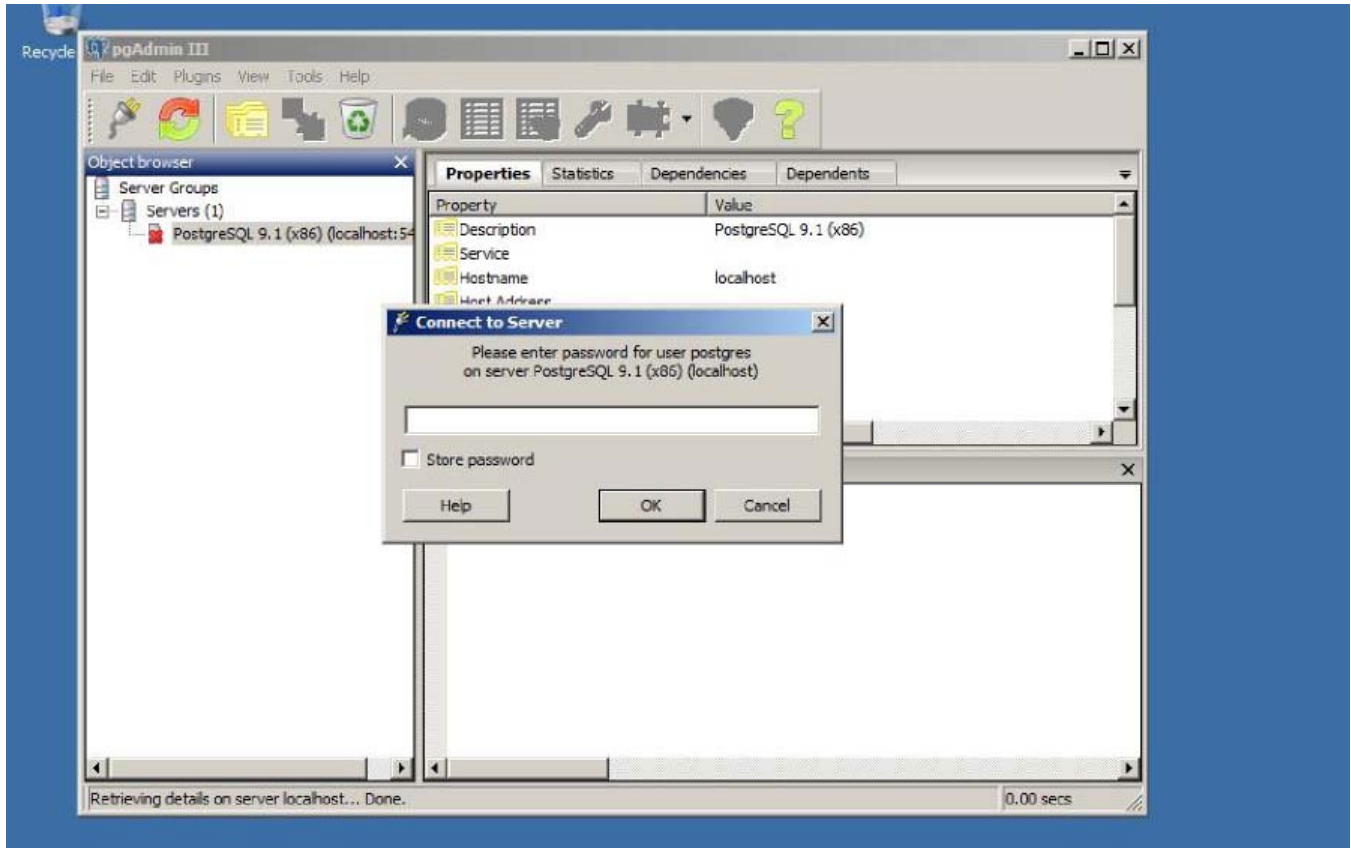
To open pgAdmin, Start --> All Programs --> PostgreSQL 9.1 --> pgAdmin III



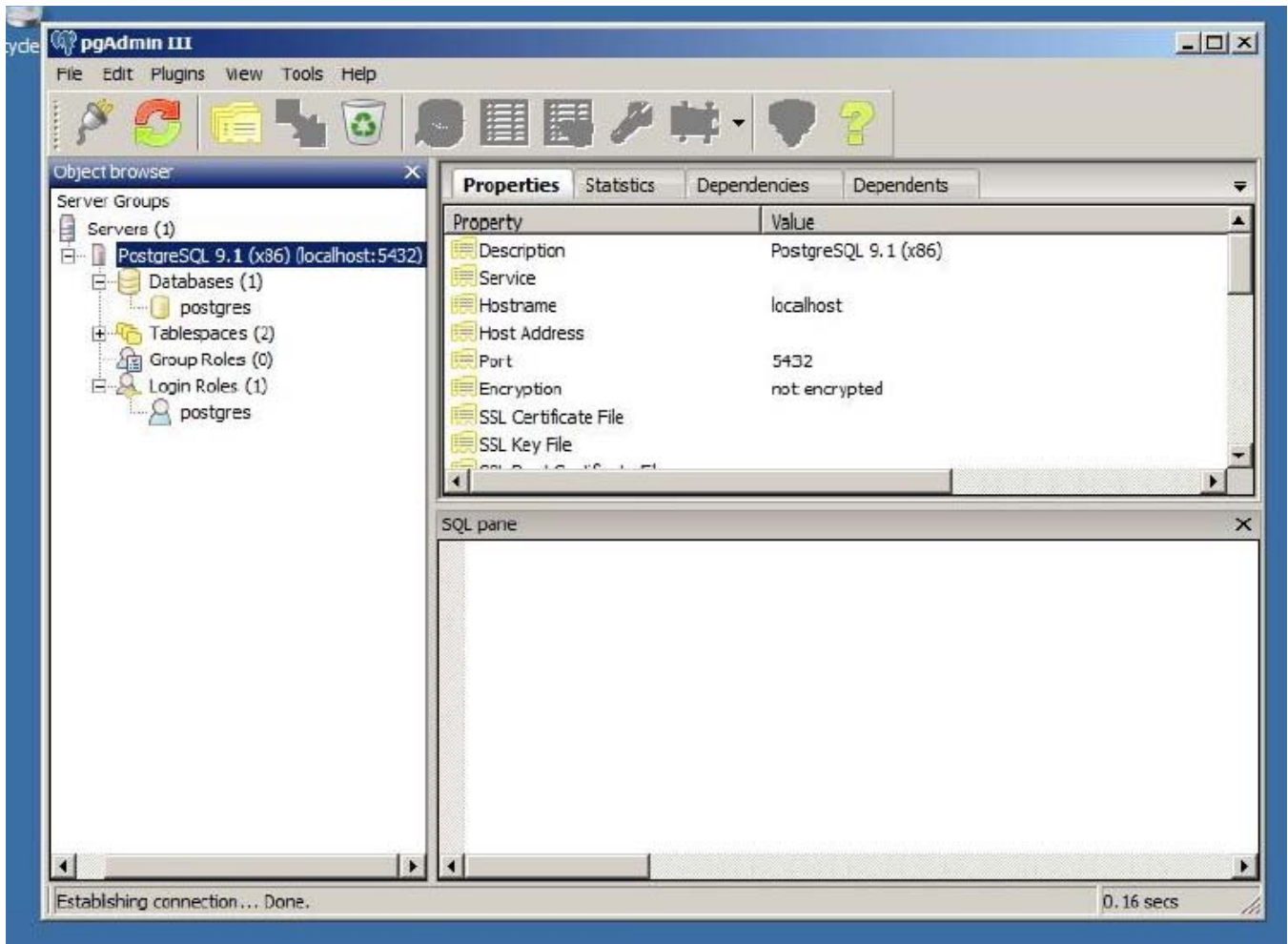
pgAdmin will display all servers it knows about (by default it should display PostgreSQL 9.1 (x86) (localhost:5432), which was recently installed. The red X indicates that pgAdmin is not currently connected to that server.

To connect, double-click on that server.

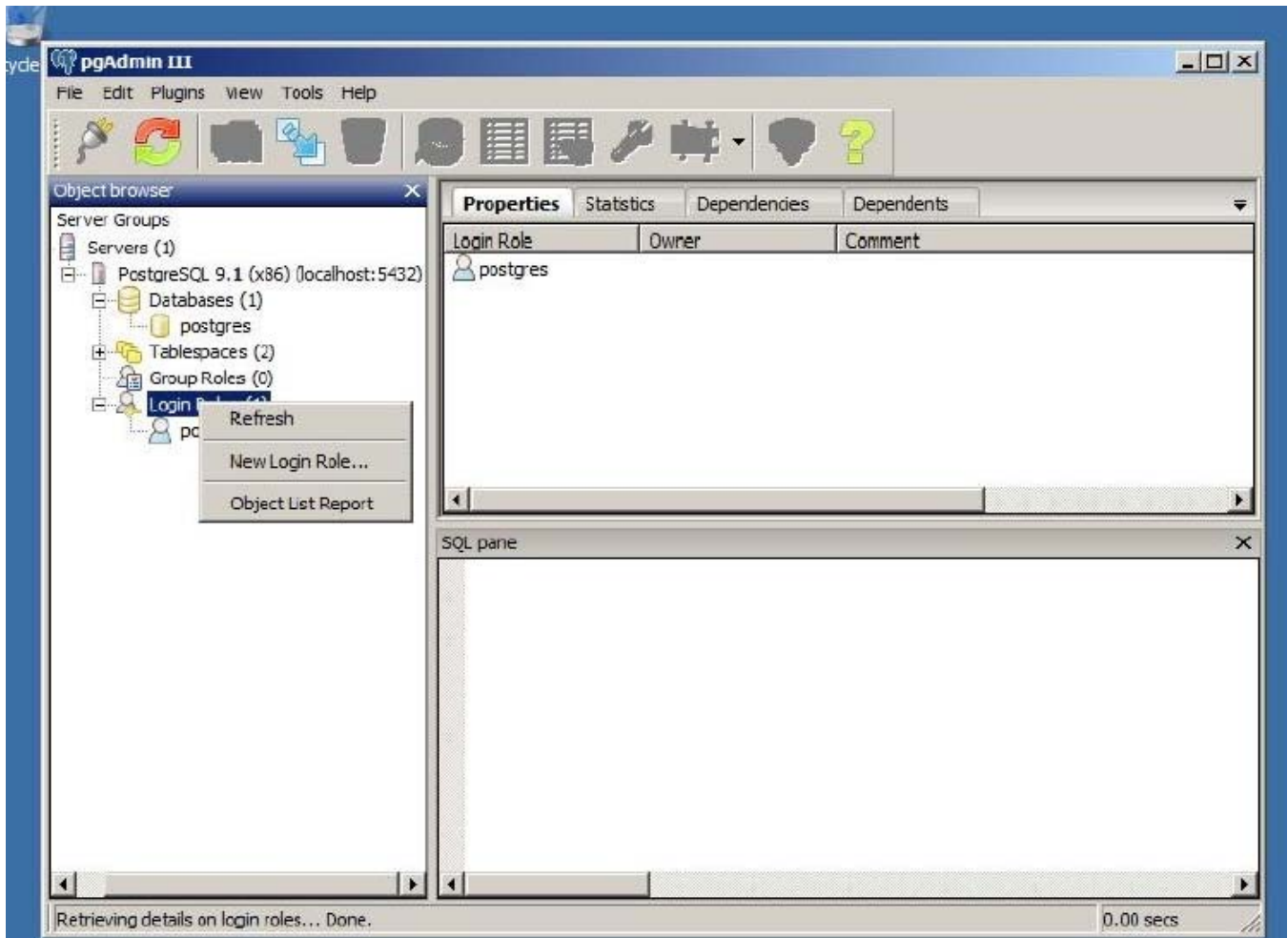
We will be prompted to enter the password for the postgres user that was previously configured:



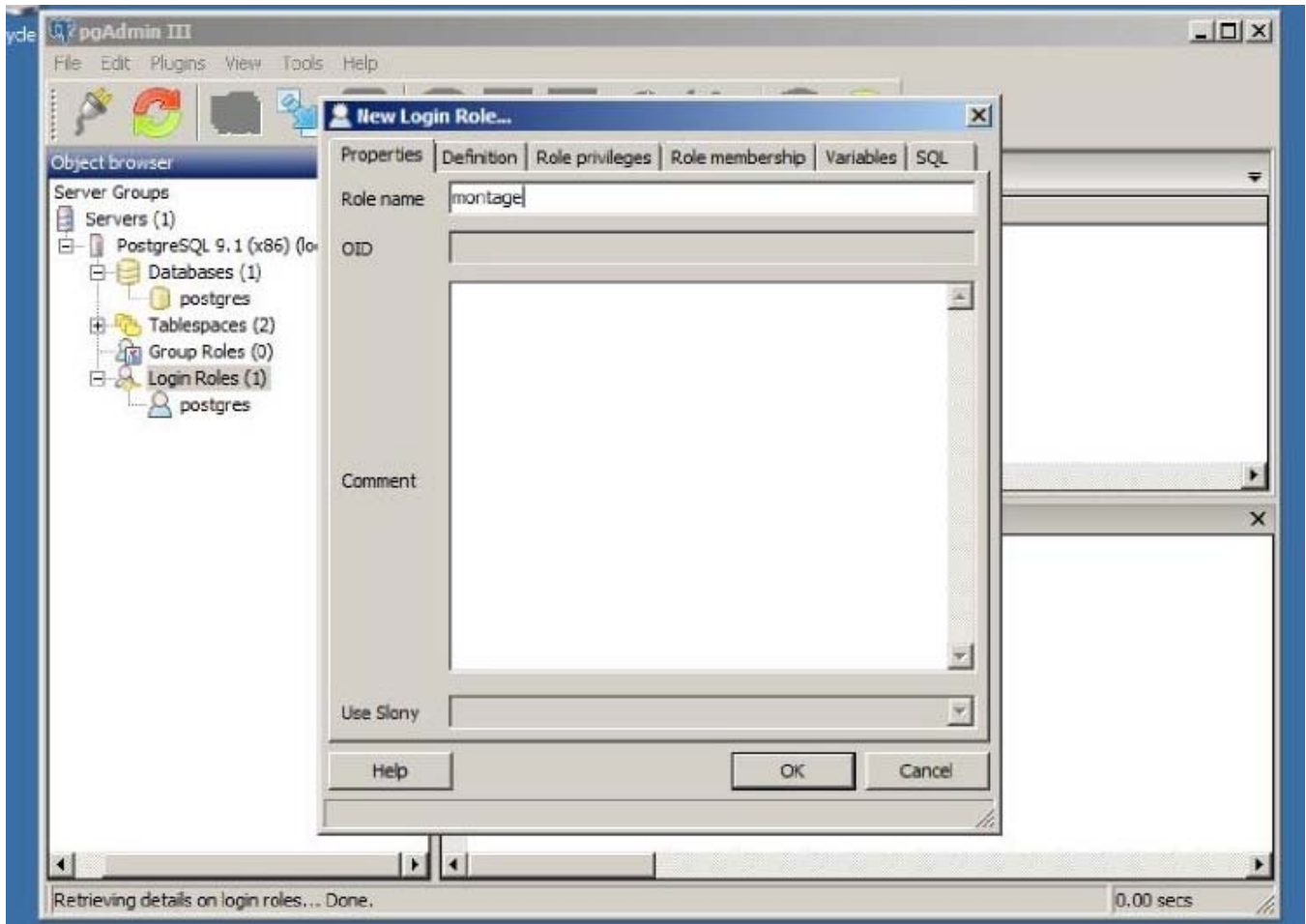
You should now be connected to the PostgreSQL server. If you expand the **Databases** and **Login Roles**, you will see that only the default **postgres** user and database exist.



Create a new user, montage, by right-clicking **Login Roles**, and then click **New Login Role...**



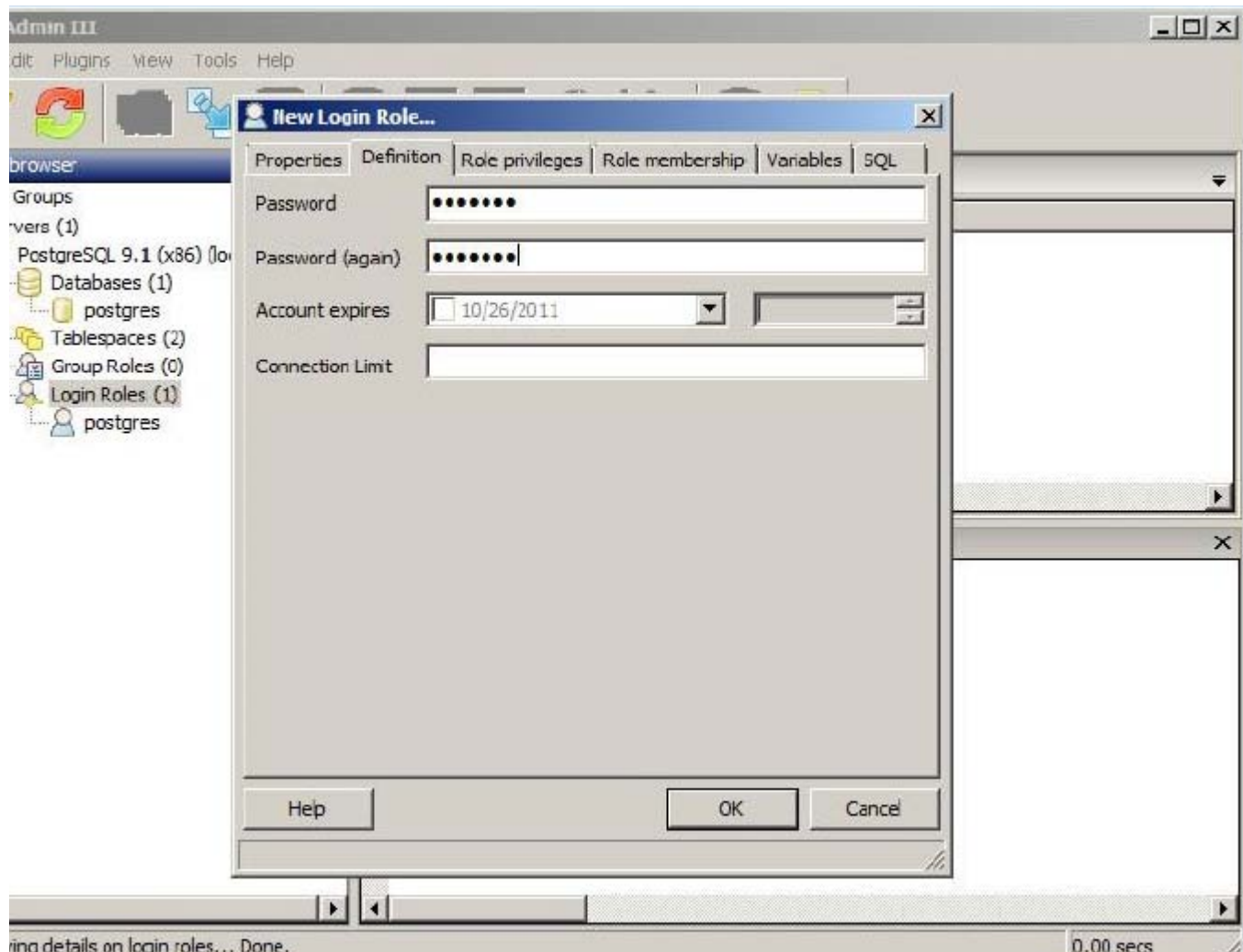
On the default Properties tab, enter the Role name as **montage**.



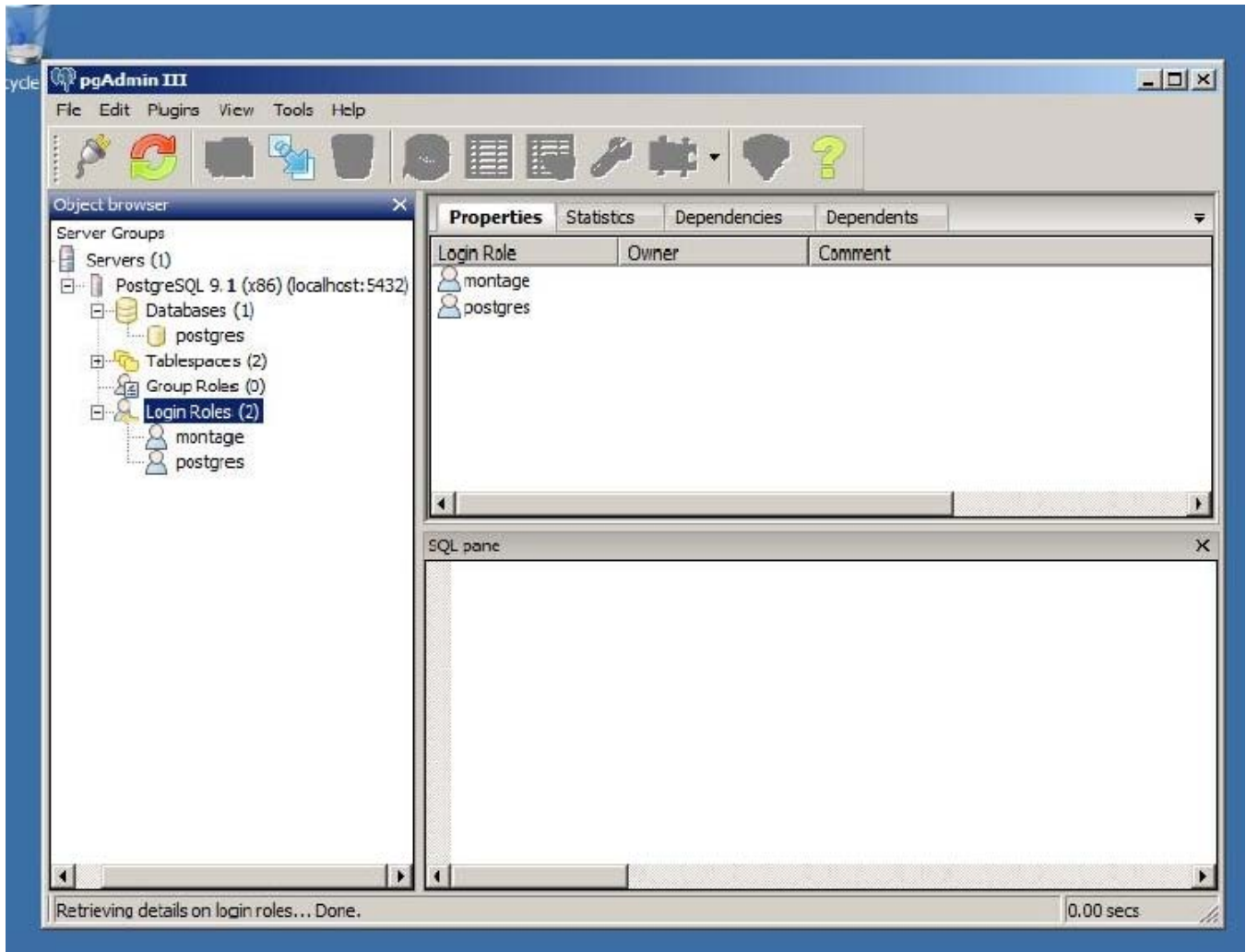
On the Definition tab, set the montage user's password.

Since the firewall will block any external requests to the PostgreSQL server, the password does not have to be extremely secure. By default Montage will assume the password is "montage". If you select a different password, make sure to note the password, since you will need it to configure Montage with the non-default password.

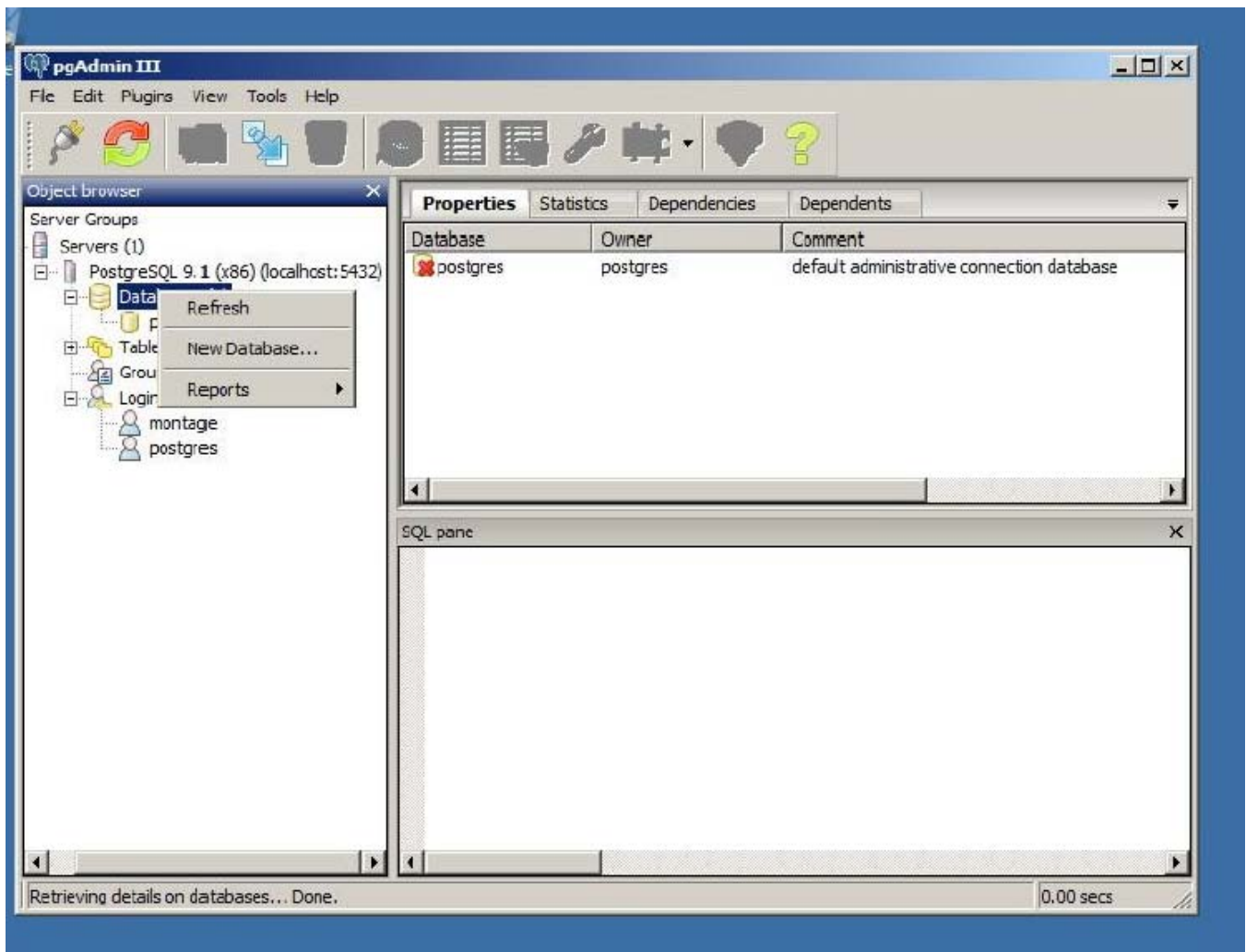
After you entered the *Password* and the *Password (again)*, click **OK** to create the user.



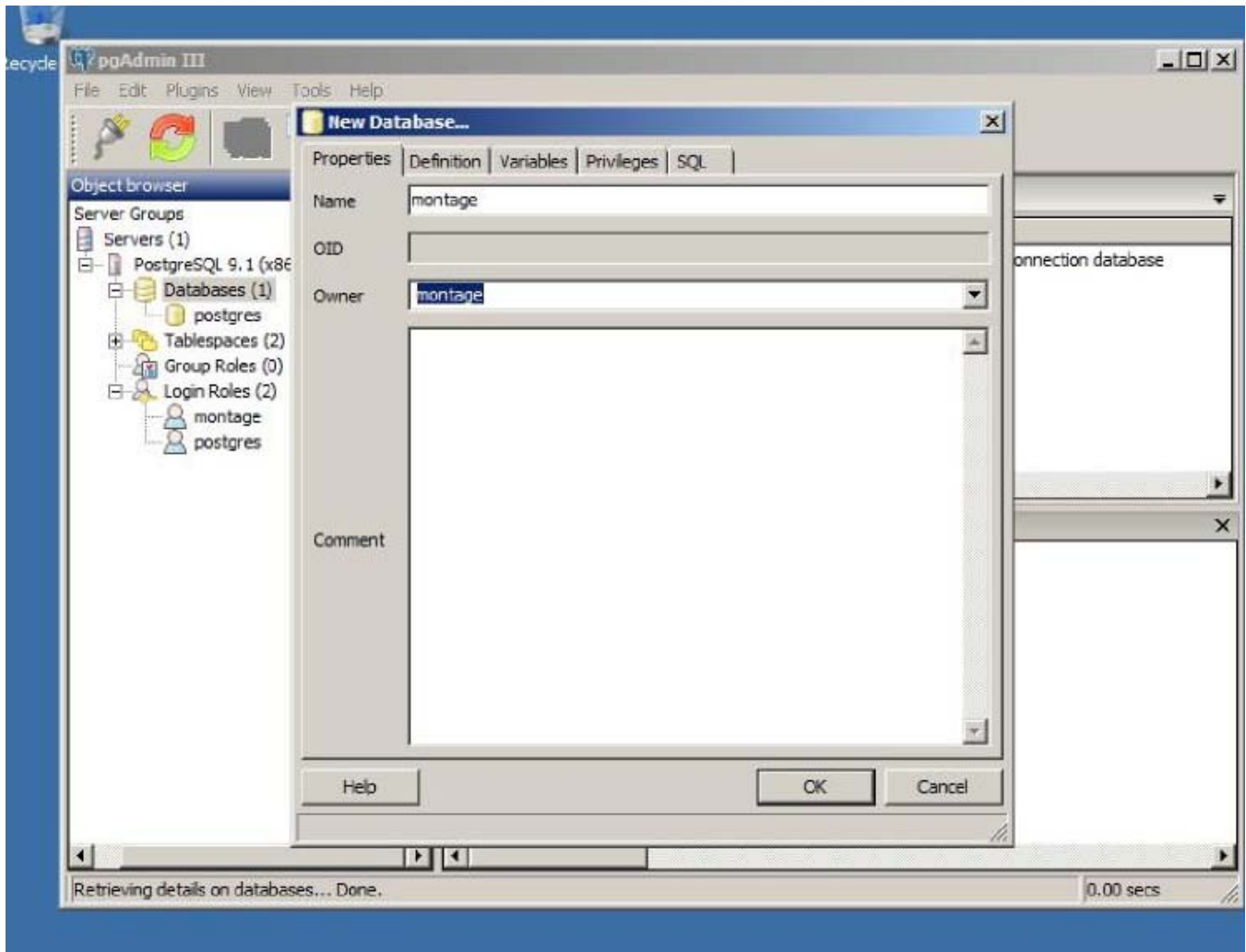
The **montage** user should display in the Login Roles tree.



Create the montage database by right-clicking the Databases tree and select **New Database...**

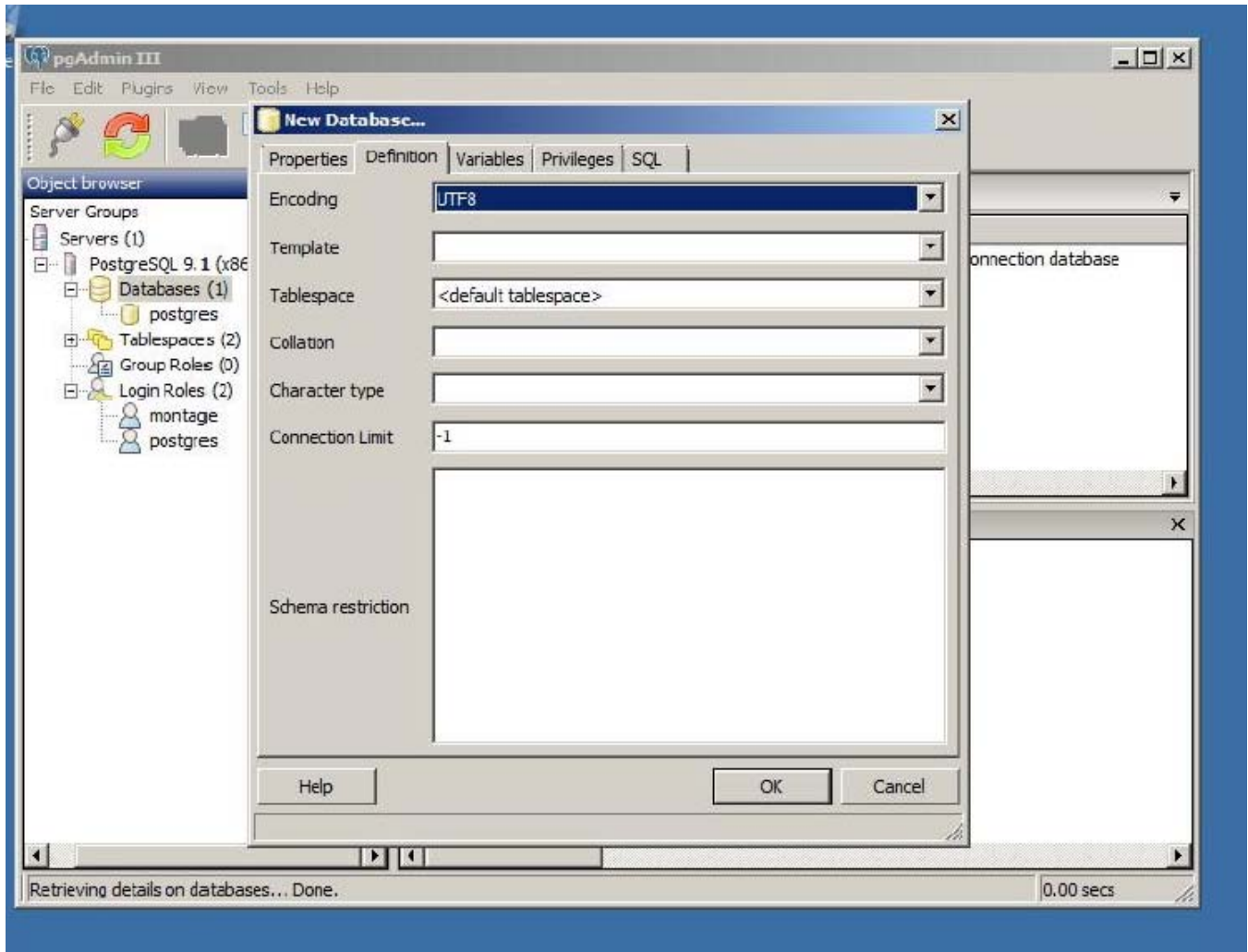


On the default Properties tab, enter the Name as **montage** and set the owner to the new montage Login Role.

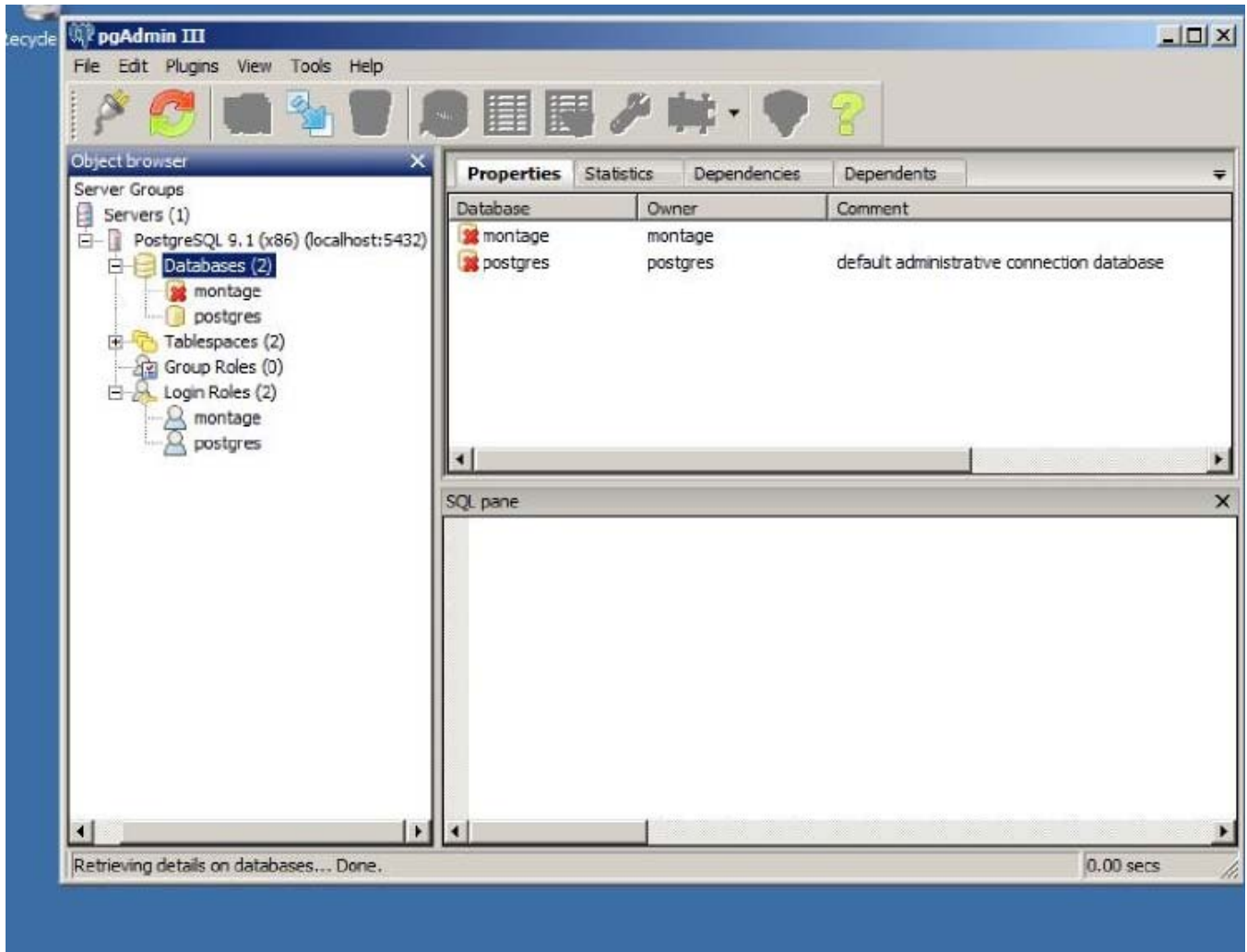


On the Definition tab and ensure Encoding is UTF8 (it should already be set to UTF8, but Montage will not correctly work if the encoding is anything else.)

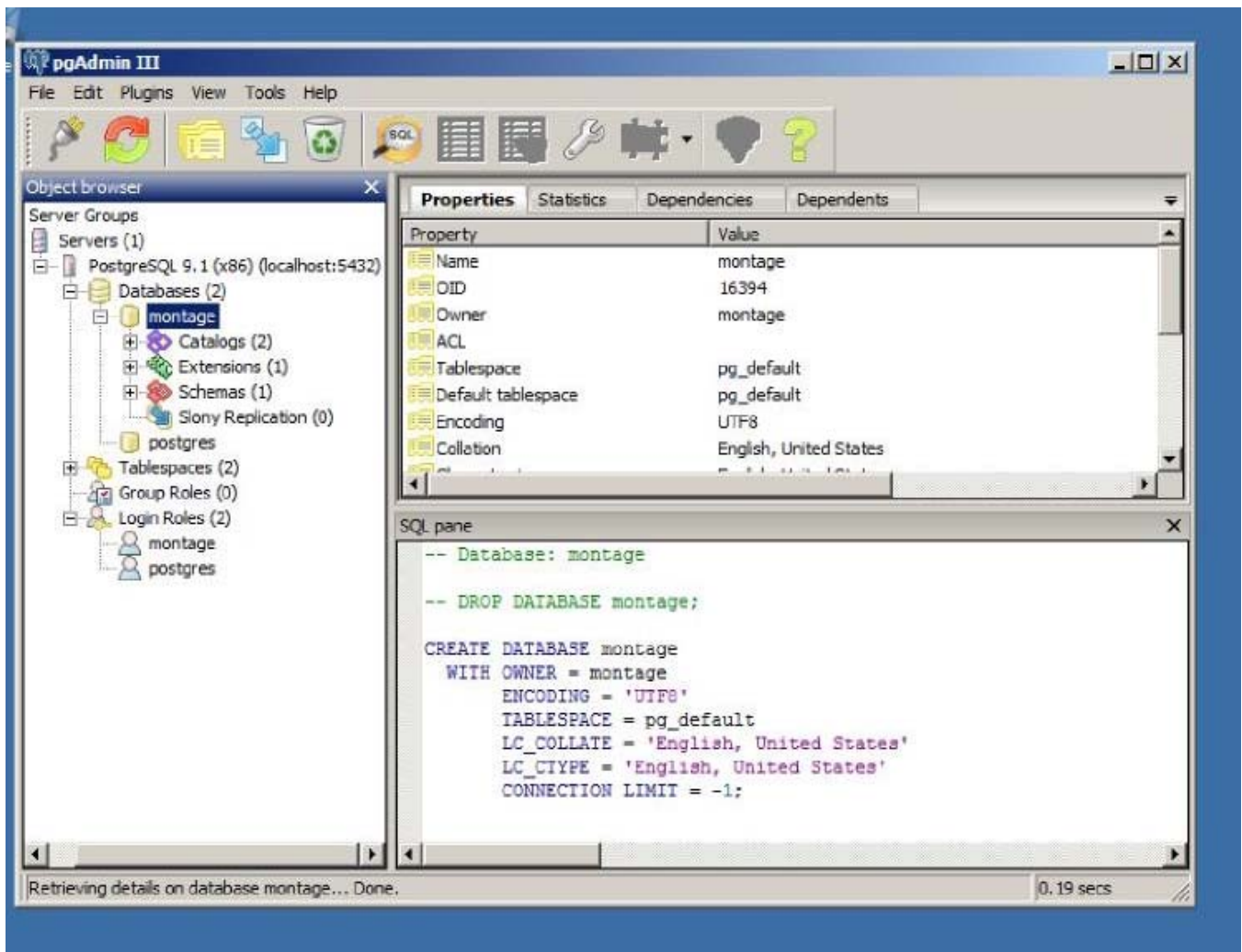
Click **OK** to create the database, which will take several seconds to allocate the database files:



The montage database displays with a red X.



The red X indicates that it is not connected to that database, but double-clicking on the database name will automatically connect and show the contents of the database (It will currently not have any tables, since the Montage installer has not yet been run).

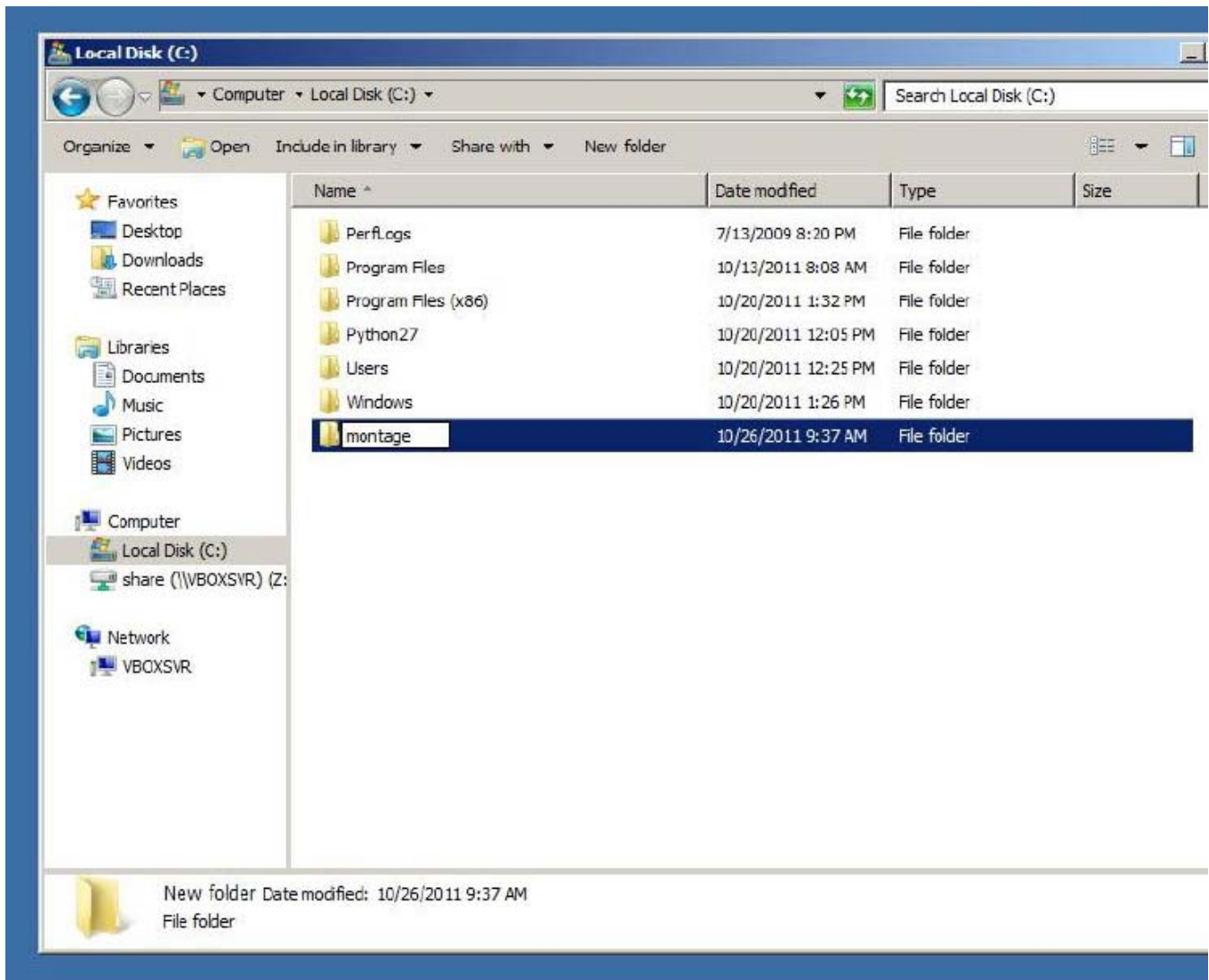


Montage Settings & License

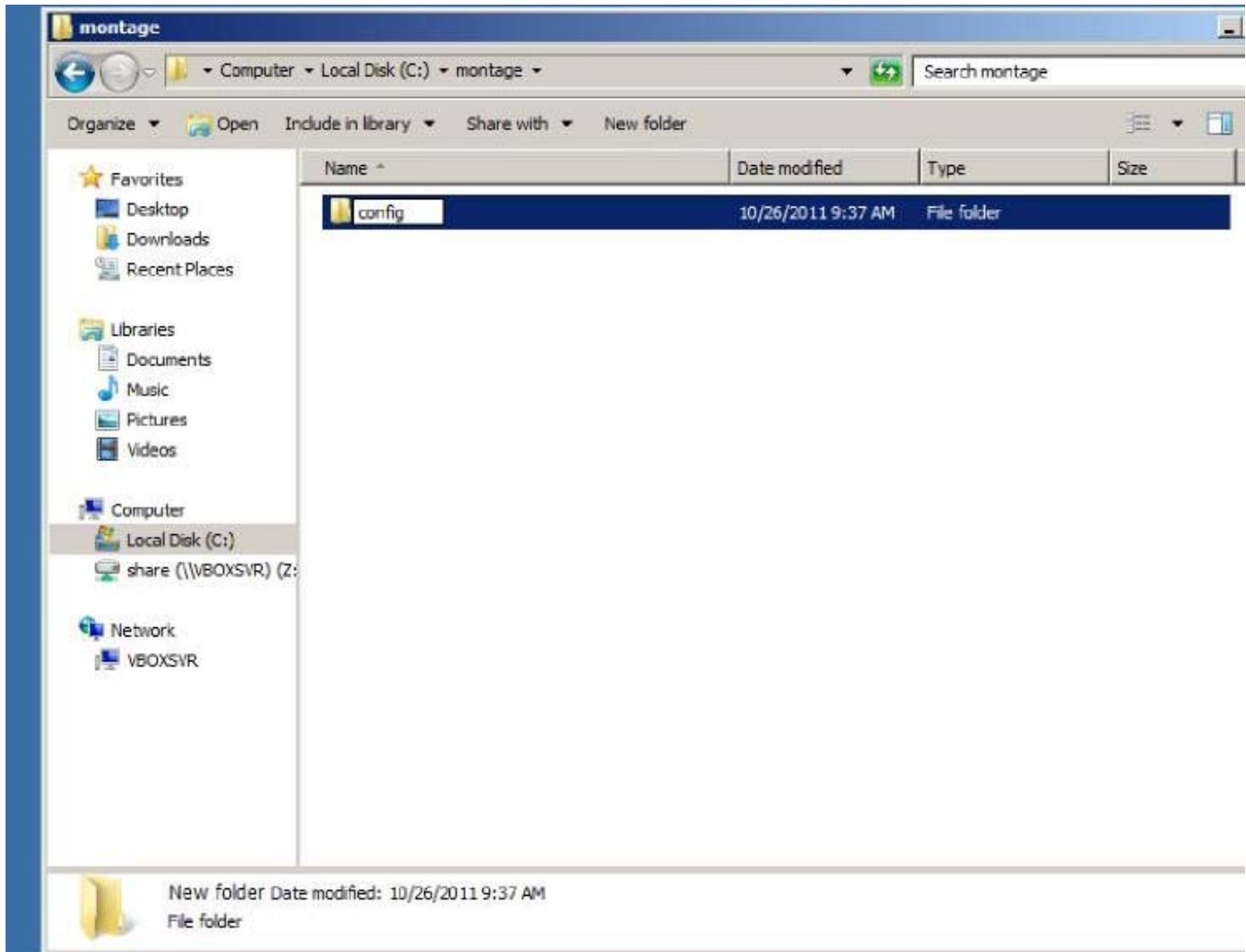
During the Montage installer, you will be prompted for the Montage installation path, by default C:\montage (in most cases, we should not change this location).

Before you start the Montage installer, you must create a subfolder, C:\montage\config, and create two files within that folder.

Create C:\montage:



Create C:\montage\config



montage-modules.json - License

Note: Do not share or re-use license files.

Montage Healthcare Solutions issues a unique license for each customer.

The license file, montage-modules.json, includes the customer's name, a list of modules which that customer has purchased access to (at the current time, Montage ships all production-ready modules to all customers), and potentially a license expiration date. The license file includes cryptographic hashes to prevent manual editing.

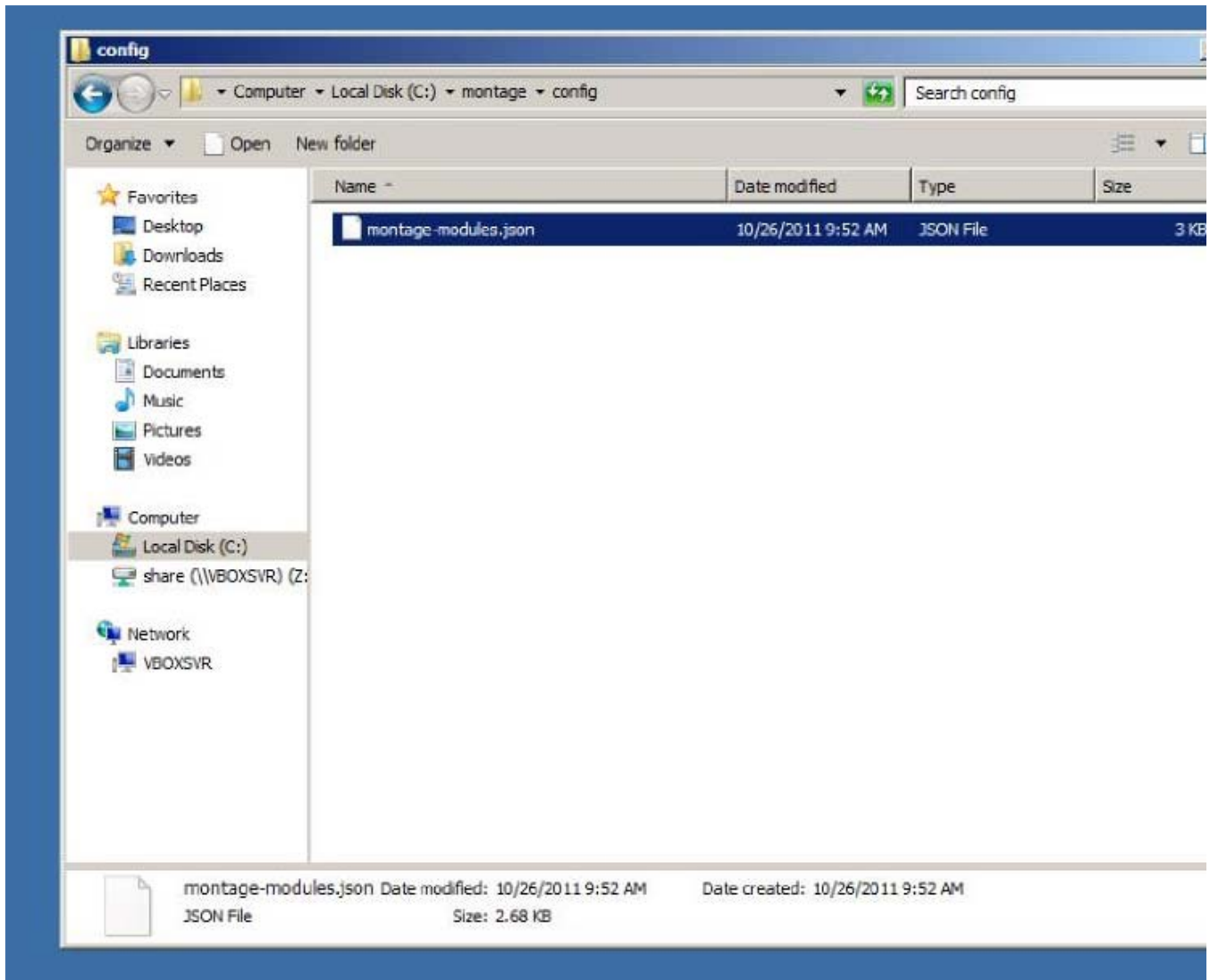
The file looks something like:

```
{
  "expires": "2011-11-01",
  "format": "1.0",
  "modules": {
    "montage_accounts": "XXXXXX",
    "montage_analytics": "XXXXXX",
    ...
  },
  "organization": "Example Customer",
  "signature": "XXXXXX"
}
```

Warning: Do not edit the license file, doing so will likely invalidate the license file. If any changes to the license, contact Montage Healthcare Solutions to issue a new license file. Even editing the customer name will cause license invalidation.

Modifying the SECRET_KEY in settings.py can also invalidate the license.

The PM will provide you a unique license file and SECRET_KEY for the customer. Place the montage-modules.json in the config directory (e.g. at C:\montage\config\montage-modules.json).



Ensure that the file extension is .json and not .txt (in case you used Notepad to save the license file). settings.py - Main Config File

Inside the config folder are stored the settings.py, which contains the database connection information, the customer's SECRET_KEY, crawling settings, and various other customer-specific settings. See Settings for a more comprehensive guide on what settings.py can contains.

To get the installation process started, settings.py should contain a SECRET_KEY, a basic definition of an index, and the email settings:

```

from montage_basesite.windows_settings import *

SECRET_KEY = 'XXXXXX'
MONTAGE_NUANCE_AUTH_KEY = 'YYYYYY'

MONTAGE_INDEXES += (
    ('montage_search.index.default.RadiologyIndex', {
        'name': 'rad',
        'display_name': 'Radiology',
        'source_systems': ['Powerscribe360']
    }),
)

from celery.schedules import crontab
from datetime import timedelta
import urllib
CELERYBEAT_SCHEDULE['ps360'] = {
    'task': 'montage_importer.tasks.import_recent_reports',
    'schedule': crontab(hour=1, minute=0),
    'kwargs': {
        'importer':
        'montage_importer.importers.vendor.nuance.Powerscribe360',
        'params': {
            'source_system': 'Powerscribe360',
            'db_url': 'mssql+pyodbc:///odbc_connect=' +
                urllib.quote_plus('DRIVER={SQL Server};SERV
            'timezone': 'US/Eastern'
        },
        'offset': timedelta(days=2),
    },
}

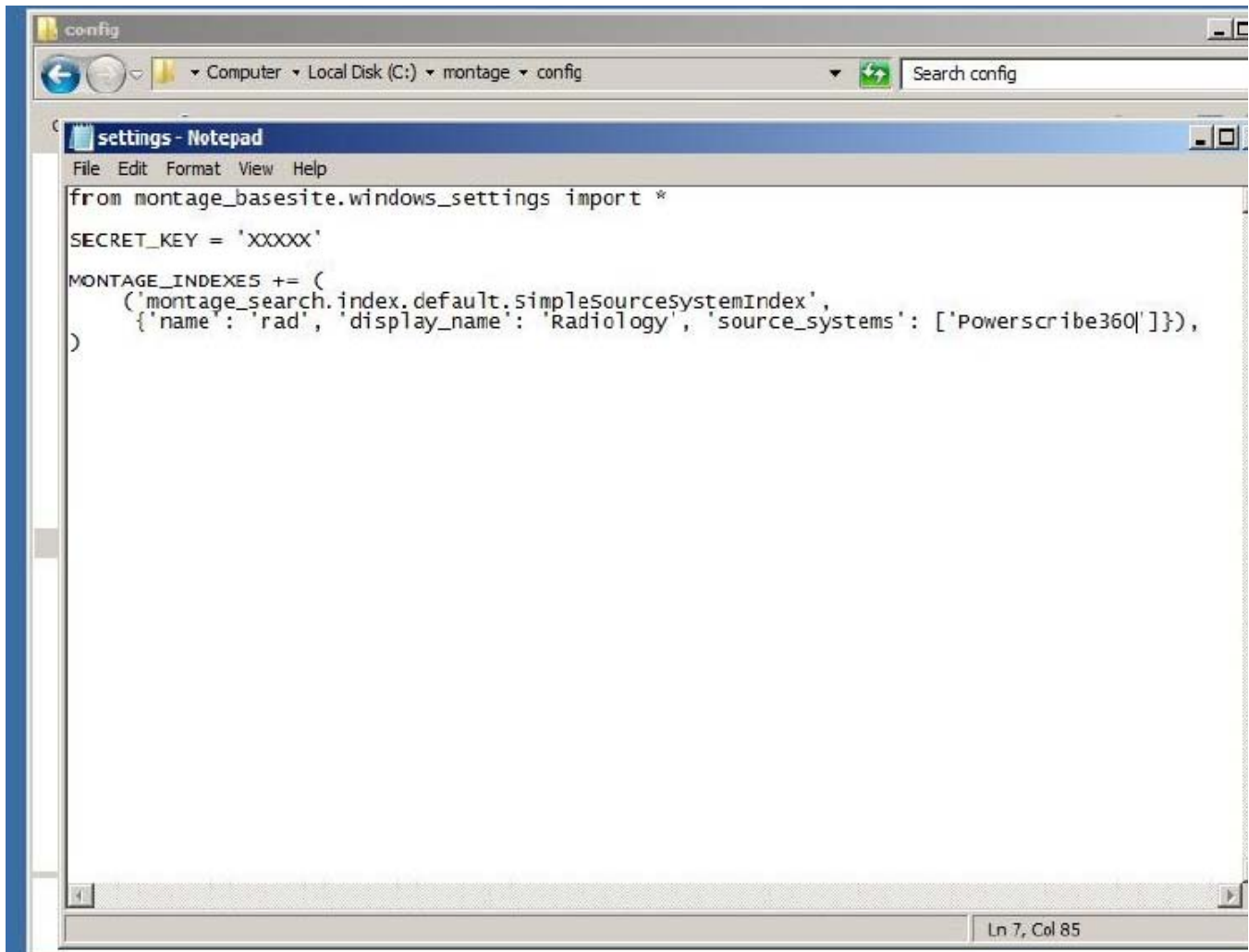
```

A basic description of this example:

- The initial from ... import * line uses an existing settings template that allows us to only define the minimal set of configuration values.
- The SECRET_KEY is used to check the license file and to secure content in the Montage application. You should obtain the SECRET_KEY from Montage Healthcare Solutions.
- The MONTAGE_NUANCE_AUTH_KEY is used to auto-login users from PowerScribe 360 into Montage. This key is the same one used in the RadPortal as the Montage Secret Key
- The MONTAGE_INDEXES defines a single Index, which is connected to Powerscribe360 Source System. The name and display_name govern what this Index is called within the Montage webpage. The source_systems is a mapping to all the systems that are crawled by Montage, which make up this specific index. In general, this definition of MONTAGE_INDEXES is sufficient. Note the name of the source system, Powerscribe360 in this case—it must match our crawler definition later.

- In this example, we are configuring the Nuance PowerScribe360 crawler to run every day at 1:00 AM. Refer to General Crawler Configuration for specific instructions on setting up the CELERYBEAT_SCHEDULE. Make sure to configure the correct 'timezone' for the given customer.

If a non-default PostgreSQL database / user / password was set in Create the PostgreSQL User & Database, they must be configured now. Likewise, if using a non-standard data directory, it must be configured.

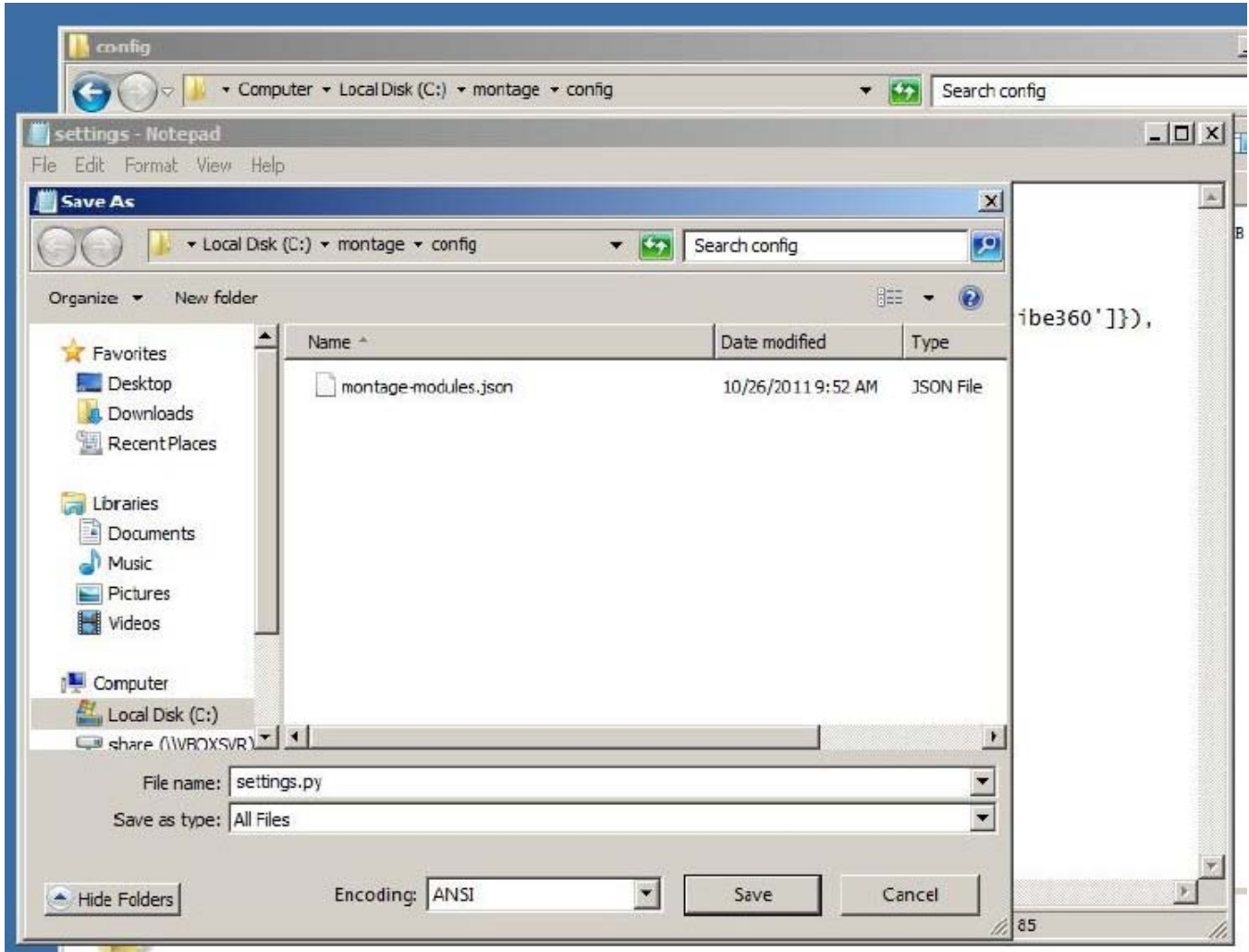


The image shows a Windows Explorer window titled 'config' with the address bar showing 'Computer > Local Disk (C:) > montage > config'. A Notepad window titled 'settings - Notepad' is open over it, displaying the following Python code:

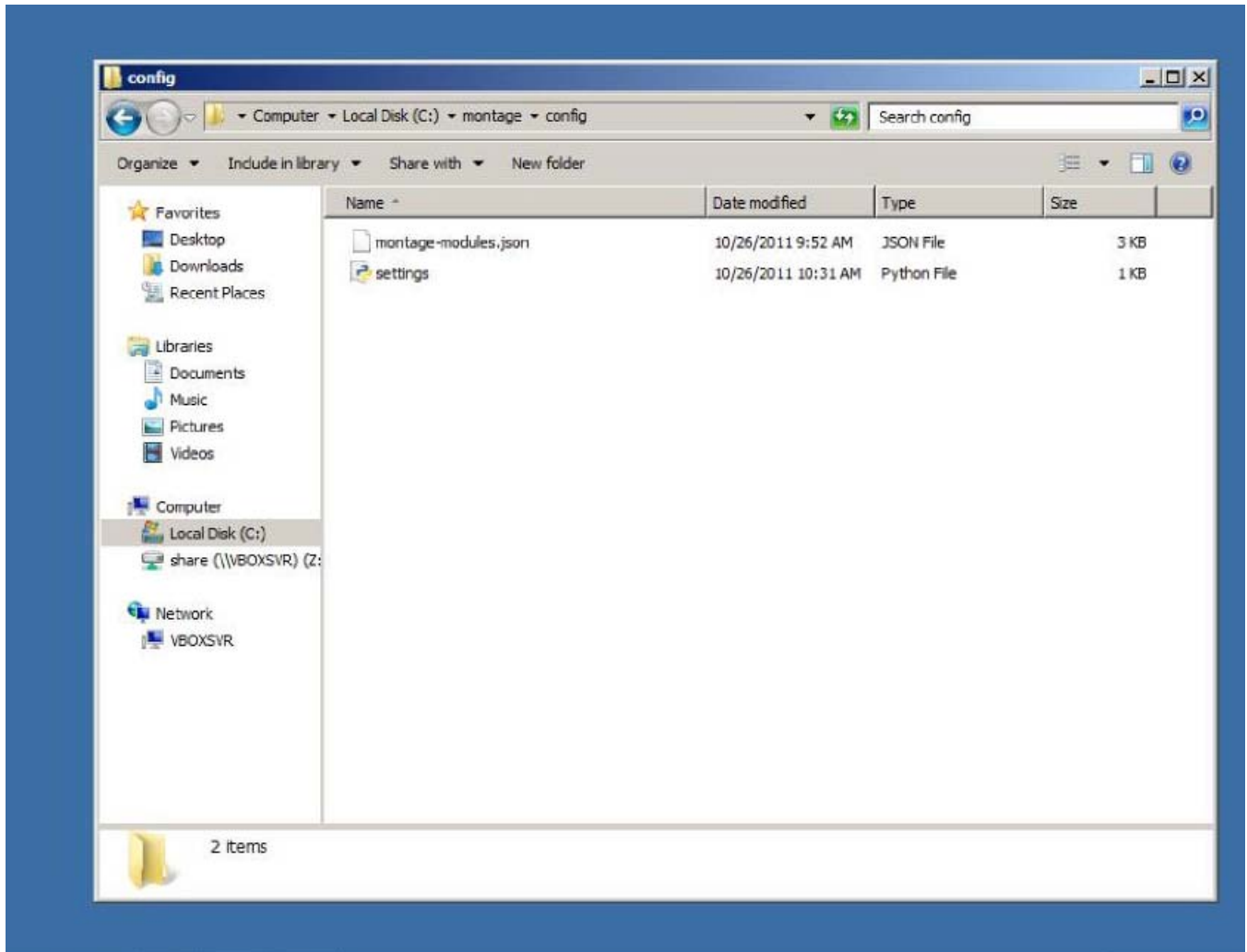
```
from montage_basesite.windows_settings import *
SECRET_KEY = 'XXXXX'
MONTAGE_INDEXES += (
    ('montage_search.index.default.simpleSourcesystemIndex',
     {'name': 'rad', 'display_name': 'Radiology', 'source_systems': ['Powerscribe360']}),
)
```

The status bar at the bottom right of the Notepad window indicates 'Ln 7, Col 85'.

Ensure that the file extension is .py and not .txt if you used Notepad to save the file.



C:\montage\config should appear as:



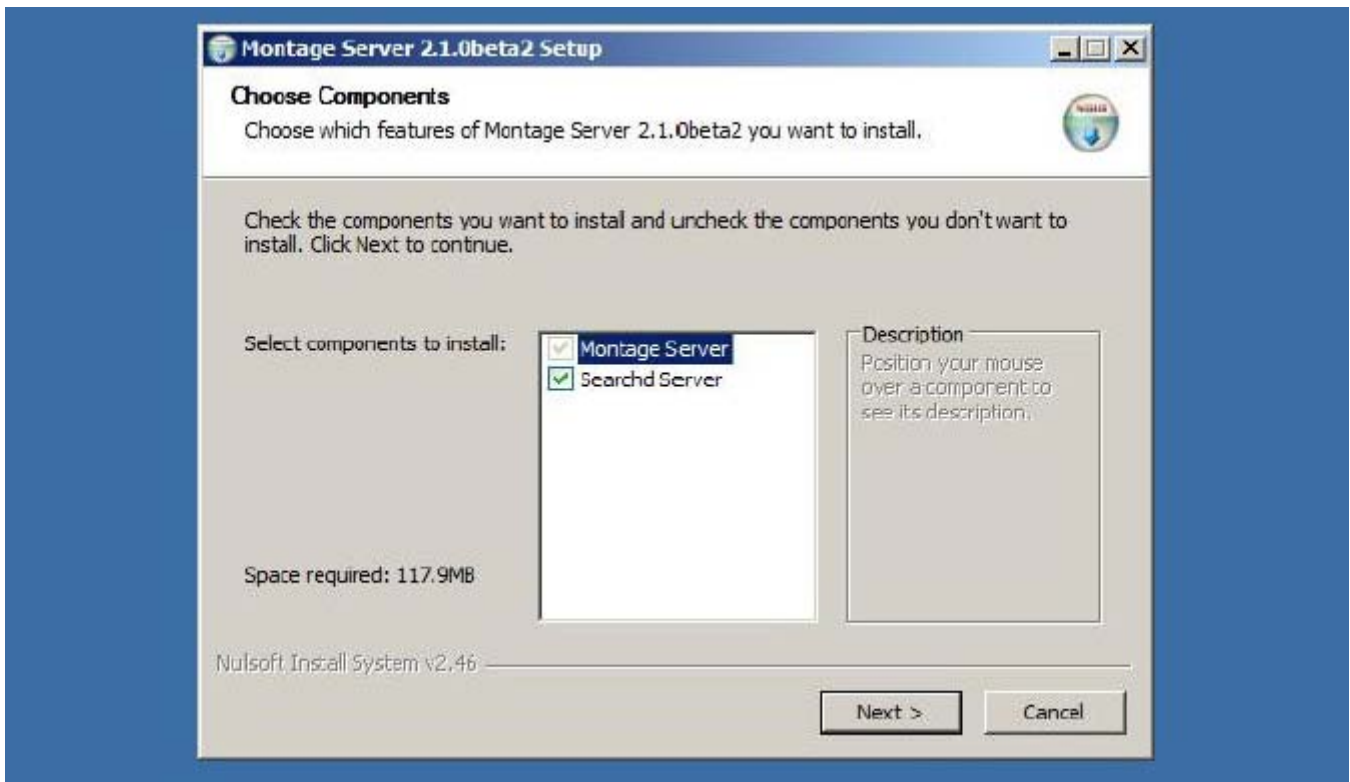
Montage Installation

Montage Installer

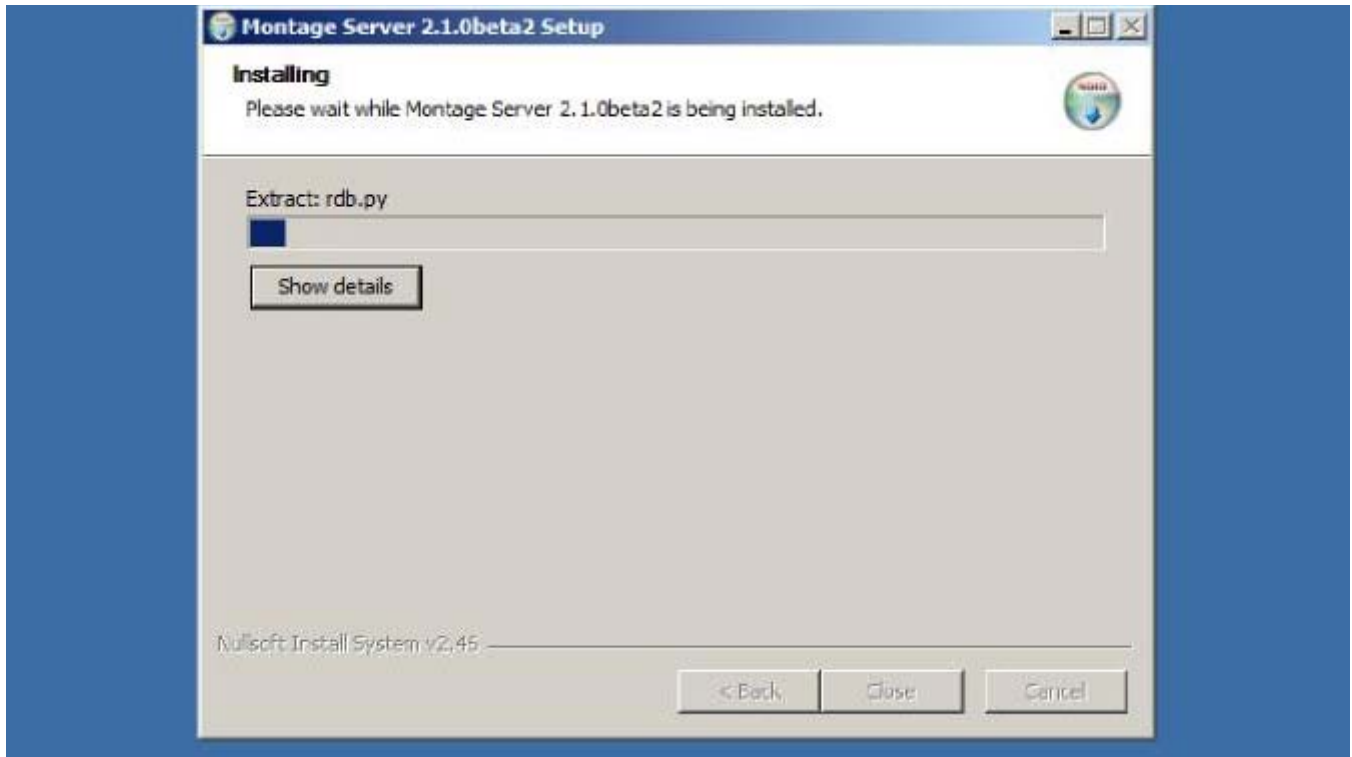
Having finished the Dependency Installation and Initial Configuration, we are ready to run the Montage installer, montage-VERSION.exe.

Unless you are upgrading, you should install both the Montage Server and the Searchd Server.

Click **Next**.



The installer will take a few minutes:



A command window will open to run montage-setup.bat, which creates the tables in the montage database, generates config\searchd.conf, and loads static data into the database (like RadLex terms). Do not press any keys, let the batch file complete and automatically close (it may take several minutes to complete).

```

C:\Windows\system32\cmd.exe

C:\montage\lib\montage-2.1.0beta2>REM symlink to the config

C:\montage\lib\montage-2.1.0beta2>REM <it is actually directory junction, since
python won't follow the Window's symlink>

C:\montage\lib\montage-2.1.0beta2>mklink /J C:\montage\lib\montage-2.1.0beta2\pr
oject C:\montage\config
Junction created for C:\montage\lib\montage-2.1.0beta2\project <<-->> C:\montag
e\config

C:\montage\lib\montage-2.1.0beta2>REM make sure the config folder has an __init_
__.py

C:\montage\lib\montage-2.1.0beta2>IF NOT EXIST C:\montage\lib\montage-2.1.0beta2
\project\__init__.py echo "" 1>C:\montage\lib\montage-2.1.0beta2\project\__init
__.py

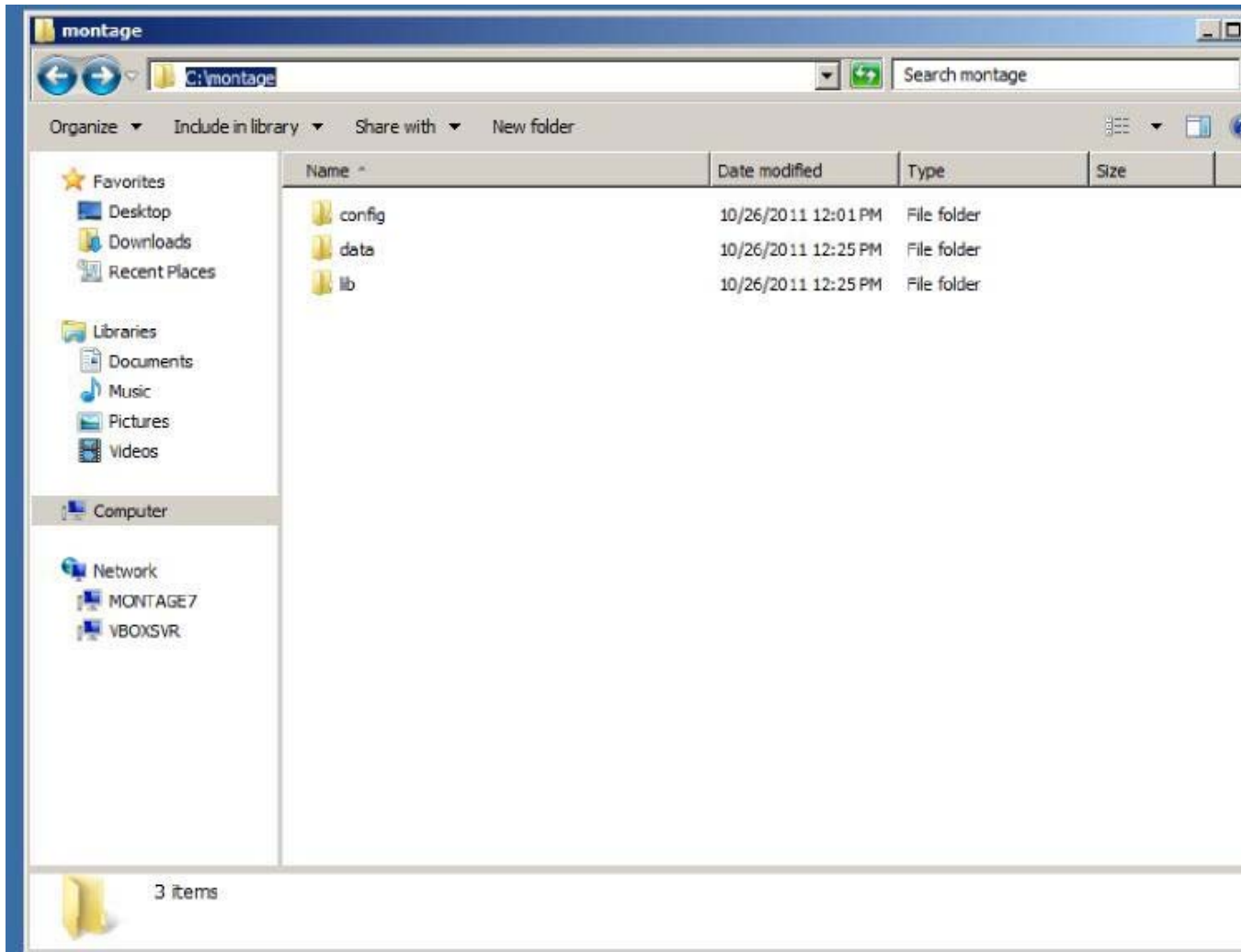
C:\montage\lib\montage-2.1.0beta2>C:\montage\lib\montage-2.1.0beta2\bin\montage
syncdb --migrate --noinput
  
```

Nulsoft Install System v2.46

<Back Close Cancel

When completed, click **Close**

The installer will create several directories in the base install directory:



Directory Structure

C:\montage

lib - The libraries that run Montage

searchd - VERSION - The binaries to run the Searchd server

montage - VERSION - The Montage Server files (HTML, Python, etc)

data - Data files (this directory can live on another partition, but requires customizing file locations in the settings)

|cache - Montage heavily caches data to avoid hitting slower network resources (like the database). Cached fragments sit in this folder.

index - Files created by the Indexer, which Searchd loads and provides results from

logs - Application logs, includes usage, audit events, and errors. See Montage Log Files.

media - Static files uploaded by users to the site

static - Montage combines and minifies static resources like JS and CSS files, it stores the minified resources in this folder

Installed Services

The Montage installer will create 4 new Windows Services.

Montage Searchd is a server which provides quick access to the index files.

Montage Celeryd is an endpoint for the task queue, RabbitMQ. Essentially, it is the worker that takes tasks on the queue and executes them asynchronously.

Montage Celerybeat is a specialized version of Montage Celeryd that runs periodic tasks.

Montage MLLP Server is an HL7 receiver, turned off by default

To verify the service are running, open the Services tool via Start -> Administrative Tools -> Services.

These services will not be running at this point. Montage search will not start until the indexing schedule task runs as pointed out in the next section.

Indexing Scheduled Task

The Montage installer will create 1 new Scheduled Tasks, Montage Indexer, which, by default is set to run at 2AM daily. It will regenerate the index files from the most recent crawler run.

Note: In future versions of Montage, the Montage Celeryd and Celerybeat tasks will be turned into Services. Currently, the tasks simply run the appropriate programs on boot.

Next Steps

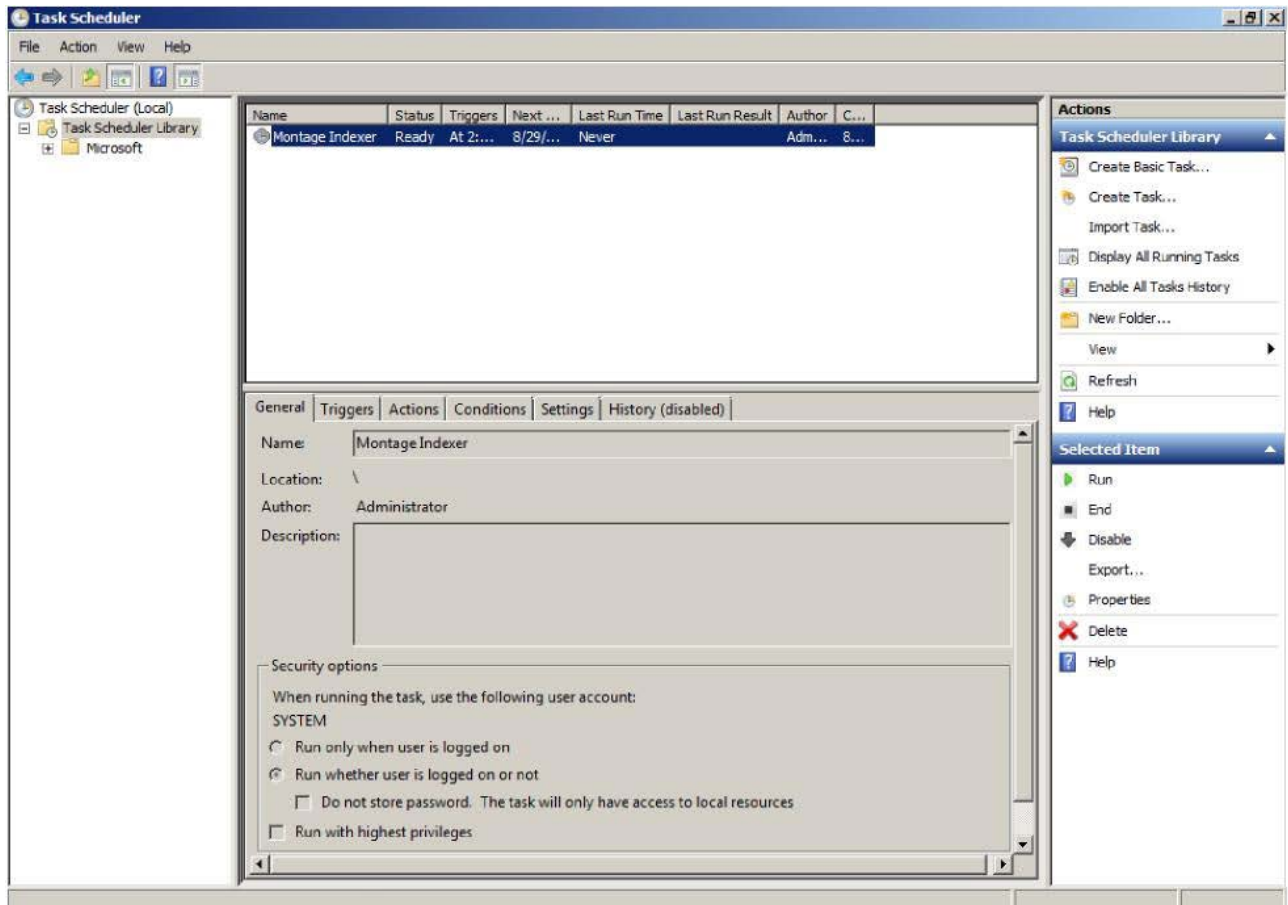
Continue to the Post Installation Configuration to perform the final installation steps and to start the initial data load.

Post Installation Configuration

Build the Index Files

In order for the Montage Searchd Service to work, the index files must be present. These files are built via the nightly Montage Indexer Scheduled Task. To avoid waiting until the next nightly run of the Montage Indexer, we can manually run the Scheduled Task: Start --> Administrative Tools --> Task Scheduler --> Task Scheduler Library

Click on the Montage Indexer task. It should be in the Ready state. In the right bar, click Run.



If you click Refresh, the task will briefly be in the Running state.

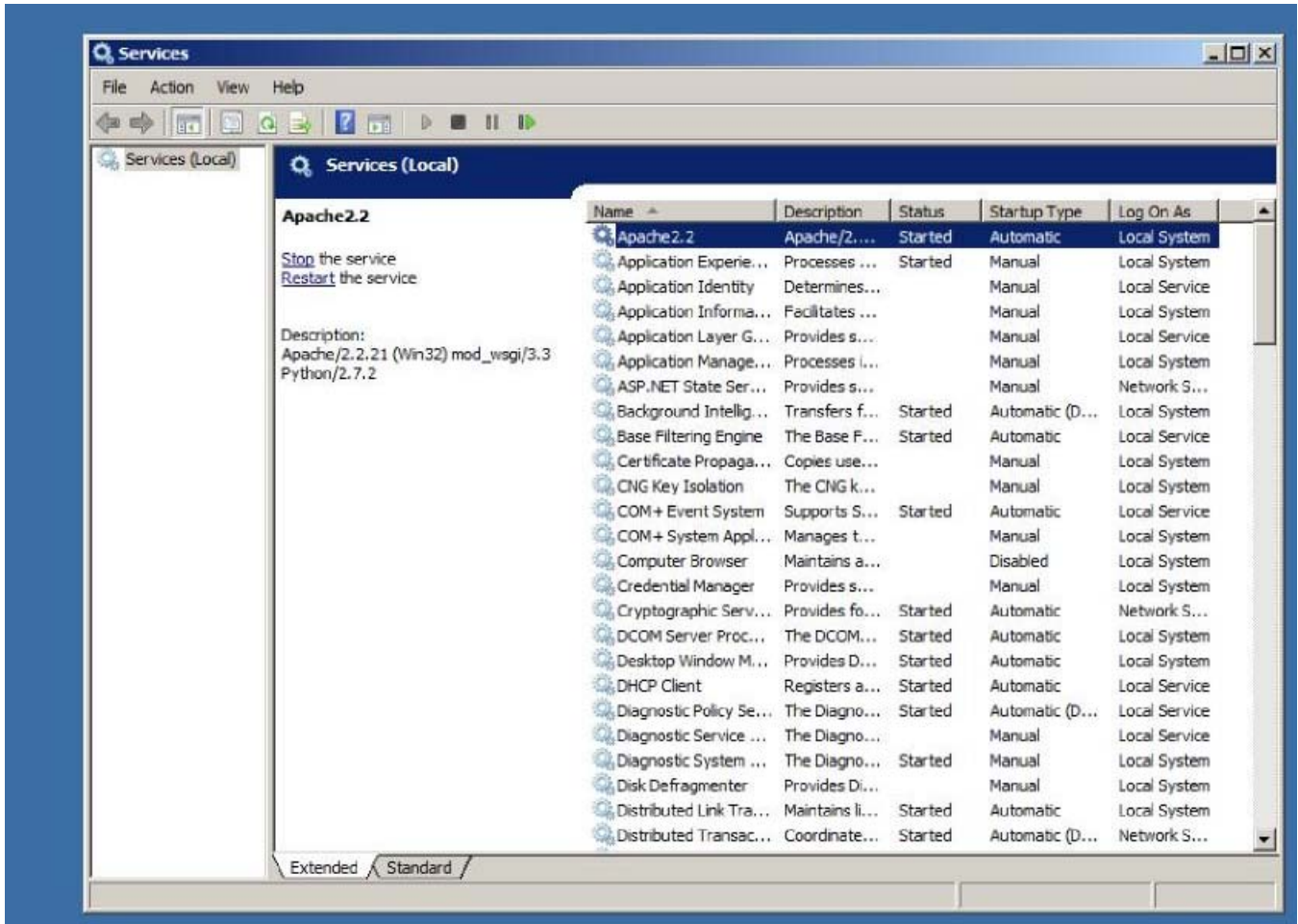
Wait for the task to return to the Ready state (for the initial index file build, when no data has been crawled, this should only take several seconds, once the crawl is finished this can take 20 minutes to an hour). The state is not automatically refreshed, therefore you may need to repeatedly click **Refresh**.

Once the Montage Indexer task is finished (task in Ready state and files present in <drive>:\montage\data\index\), we can proceed with turning on the services.

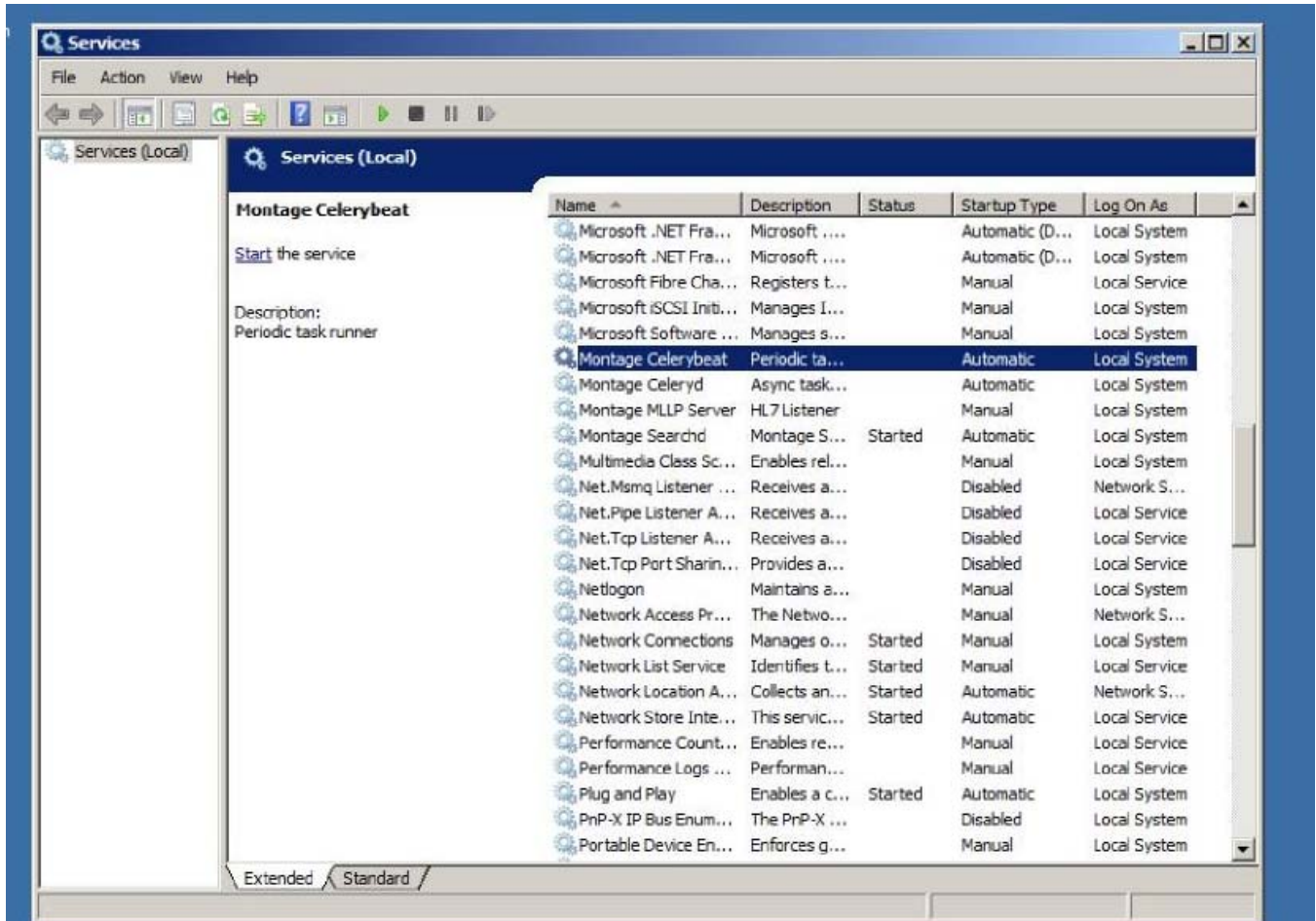
Start Services

We now have Montage installed, but we still need to link it to the Apache webserver, so HTTP requests get routed into the Montage Server.

To apply the Apache changes that occurred during the Montage installation, we must restart Apache via the Services interface: Start --> Administrative Tools --> Services.



Check that the Montage Searchd, Montage Celeryd, and Montage Celerybeat services are running. If they are stopped, start them. Only should start the Montage MLLP Server if it Montage is receiving HL7 messages.

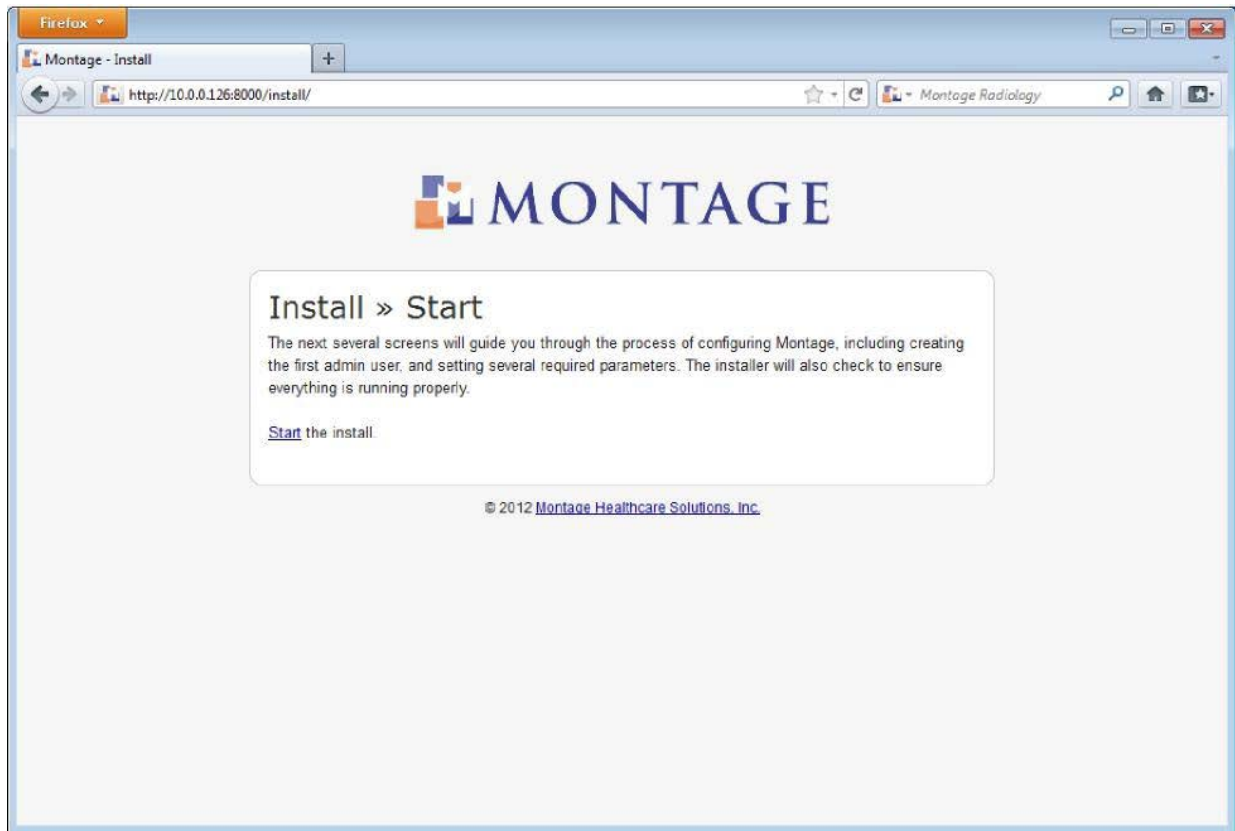


Note: Whenever there is a configuration change (e.g. to C:\montage\config\settings.py), the services (Apache 2.2, Montage Celeryd, Montage Celerybeat, and optionally Montage MLLP Server) must be restarted to reload the configuration file.

Web Configuration

The Montage server features a web-based process for creating the initial admin account and configuring several vital settings. A number of checks will also be run as part of this process to identify common installation problems.

Using the domain we obtained as part of the Pre-Install Checklist, go the URL <http://<site's domain>/install/>



Click the Start link.

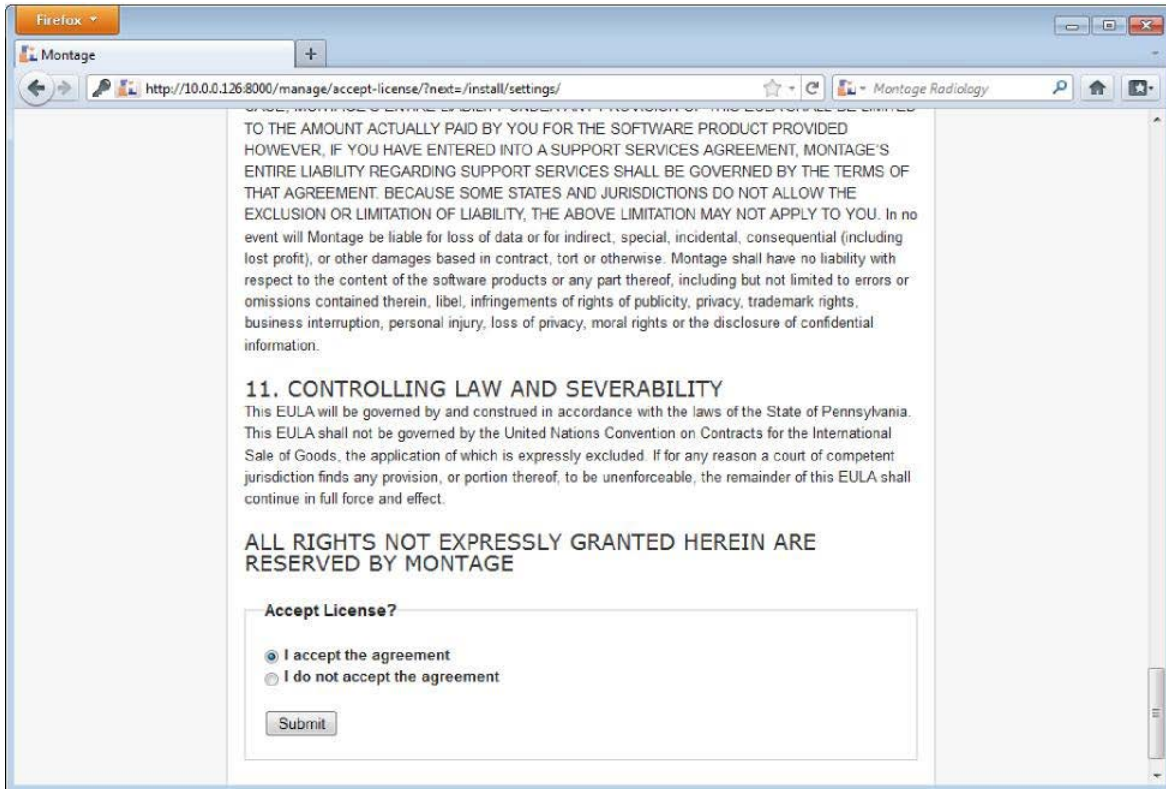
If no admin user has been previous created, you are prompted to create this user. Once the account information is completed, click **Create User**.

The PM should provide you the account name and Password based on the customers requirements.

The screenshot shows a web browser window with the following details:

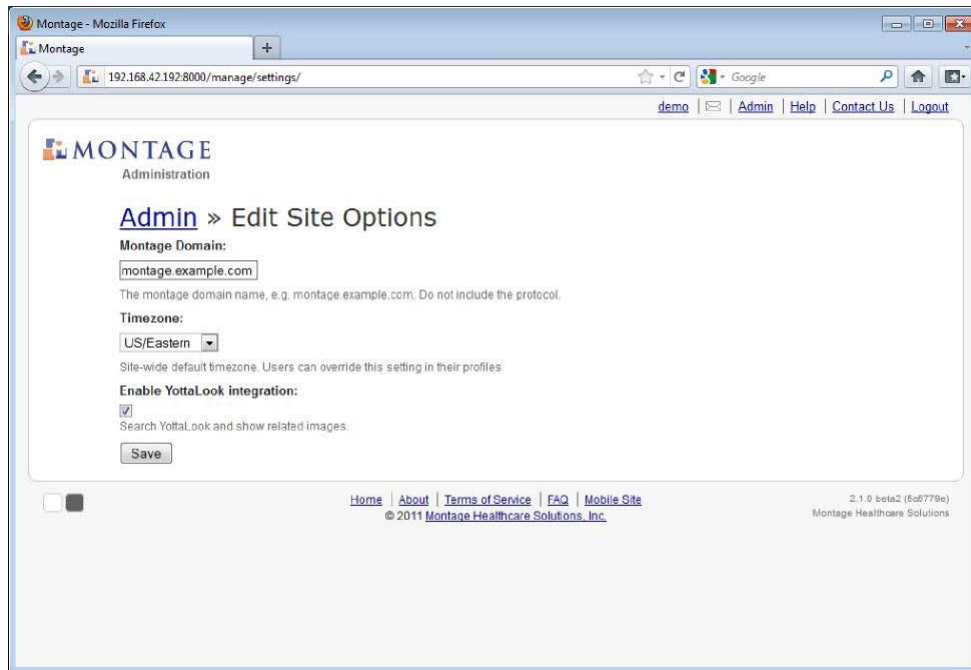
- Browser: Firefox
- Page Title: Montage - Initial Admin
- Address Bar: http://10.0.0.126:8000/install/initial-user/
- Page Content:
 - Logo: MONTAGE
 - Section: Install » Initial Admin
 - Instruction: Create an admin user, who can then create accounts for other users.
 - Fields:
 - Username:
 - Required. 30 characters or fewer. Letters, digits and @/./+/_ only.
 - Password:
 - Password confirmation:
 - Enter the same password as above, for verification.
 - First name:
 - Last name:
 - E-mail address:
 - Button: Create User

You will see the Montage EULA. Read the agreement, select I accept the agreement, and click **Submit**.

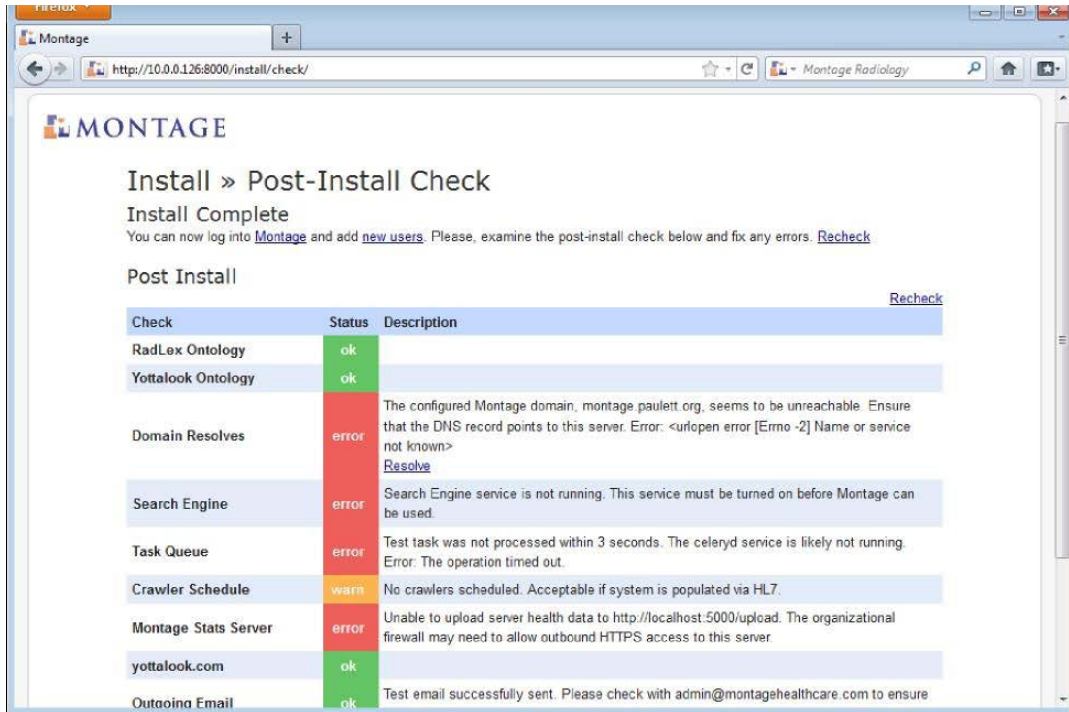


You must tell Montage its domain, so that it can properly create links.

Enter the correct FQDN, server + domain name in the Montage Domain and click **Save**.



Montage will run through a series of checks (it may take several minutes), to ensure the required services are running and that Montage is properly configured. If any checks result in errors or warnings, please follow the instructions or work with Montage Support to resolve the issues:



Next Steps

You have configured the base application at this point, the next step is to perform a historical crawl Initial Crawl.

The first crawl should not be done until instructed to do so by the PM. There may be no data, or only test data, that we do not want imported into Montage at this time. We may need to make edits to the settings file depending on what the PS360 discovery scripts returned. Do not configure the setting file with ps360 info until you are ready to do the initial crawl, so it does not take off on it's own.

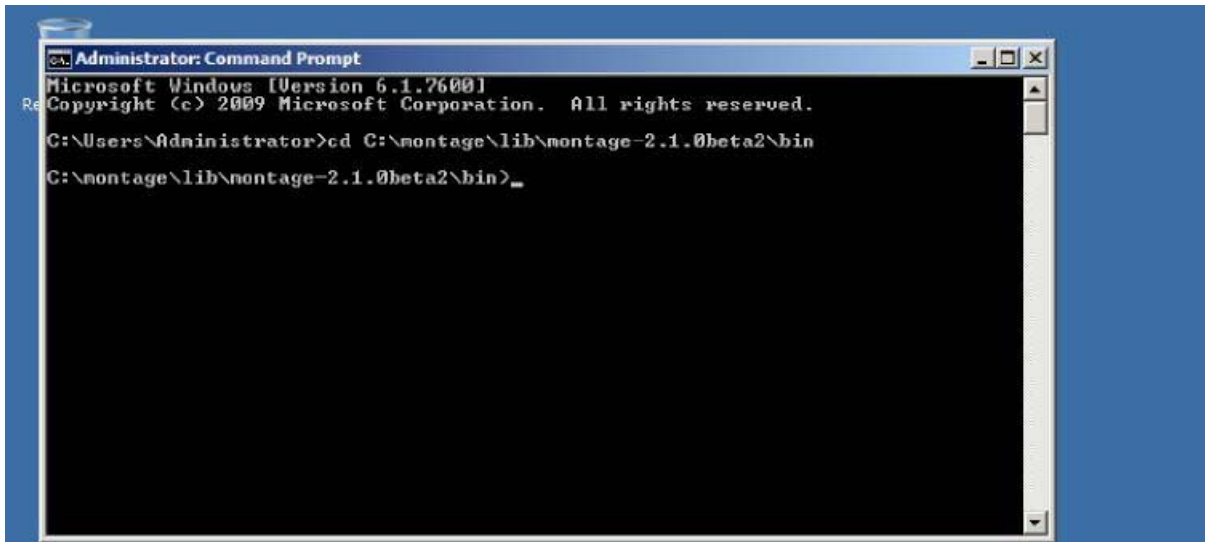
Initial Crawl

The Montage Celerybeat service will perform daily crawls of any new or updated reports, but you must manually start the process to crawl historical data from PowerScribe 360.

Warning: The initial crawl can be taxing on the upstream database server. Ideally the crawl should be against a mirrored copy of the database, during off-hours, or over a limited time window (using successive runs with `--start-date` and `--end-date`). Normal operations will still be possible, but may be slower than normal due to the increased network and CPU load.

Open a command prompt (cmd.exe), change into the bin directory of the Montage installation (C:\montage\lib\montage-VERSION\bin), e.g.:

NOTE: If O.S. is 2012, command prompt needs to be opened as an administrator.



If you have properly configured the crawler in the CELERYBEAT_SCHEDULE, you can perform the initial crawl via the montage run_importer command.

Trial Crawl

It is recommended to run a small, trial crawl against a month or two of data.

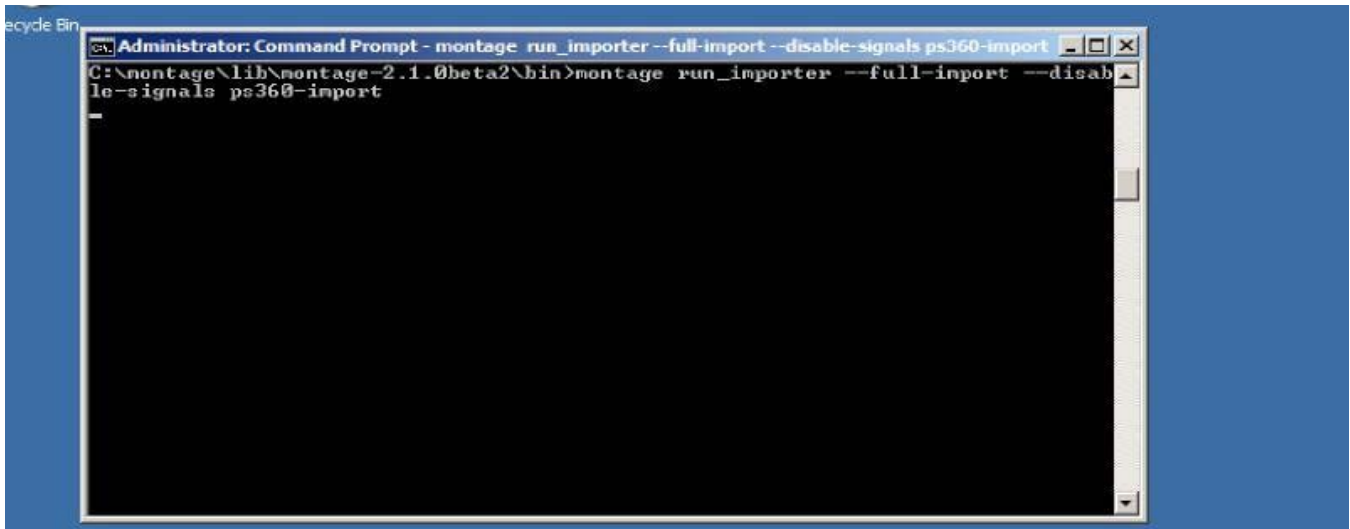
```
montage.exe run_importer --start-date="2012-05-01" --end-date="2012-06-30" ps360
```

If that succeeds without issue (check montage-importer.log), we can proceed to a full crawl.

Full Crawl

To run the full crawl (to run in smaller batches, remove the `--full-import` and substitute with `--start-date` and `--end-date`, working your way back in time), execute:

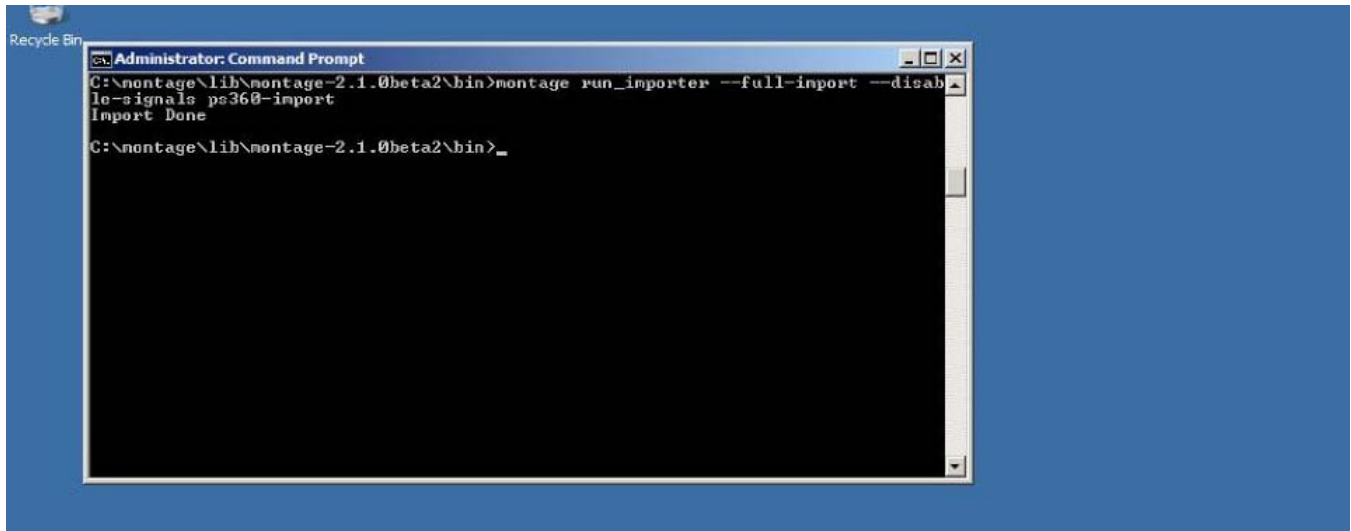
```
montage.exe run_importer --full-import ps360
```



The command runs the ps360 crawler, as defined in the `CELERYBEAT_SCHEDULE`. The `--full-import` flag indicates that the typical only grab reports that are new or changed since the last crawl algorithm does not apply. Instead, all reports should be crawled.

You can monitor the import progress in the looking at `montage-importer.log`. The crawl speed depends upon the network connection to the SQL Server and the processing power of the Montage server. 10k reports typically only takes several minutes. Importing a whole RIS can take a day or more.

When completed, you are notified.



You could wait for the Montage Indexer Scheduled Task to run at night, however, forcing the indexer to run can be done by kicking off the Montage Indexer Scheduled Task.

To access the file, navigate to C:\montage\lib\searchd-VERSION\ directory.

Installation Finished.

Manual Revision History

Note: In this table the most recent changes are first by date.

Date	Sec	Page	Change (Paragraph, Sentence, Figure, Table, etc.)	Initials
3/8/16	1	1	Added Create Montage User in COMM4Database	SEP
01/08/16	1	10	Added Identify the primary <u>active</u> accounts in PowerScribe SQL script.	SEP
12/1/15	1	2	Added: https://stats.montagehealthcare.com/upload	SEP
11/11/15	1	All	First Publish Date	SEP

