

Landsat on AWS

[Originalartikel](#)

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<html> <div class=„parsys content“ readability=„41“>
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    <div class="aws-text-box section" readability="36">
      <div class=" " readability="18">
        <p>All Landsat 8 scenes are available from the start of imagery
capture. All new Landsat 8 scenes are made available each day, often within
hours of production.</p>
        <p>Landsat on AWS makes each band of each Landsat scene available as
a stand-alone GeoTIFF and the scene's metadata is hosted as a text
file.</p>
        <p>Note that as of 5/1/2017, USGS has started providing imagery via
Collections which break data into different tiers. Both Real-Time and Tier 1
Collection 1 data is available.</p>
        <p>Pre-Collection and Collection 1 data has slightly different
formats, described below.<br/></p>
      </div>
    </div>
    <div class="title-wrapper section">
      <div class="row title">
        <p>
          <h3 id="Collection_1_Data"> <a name="Collection_1_Data"> Collection
1 Data</a> </h3>
        </p>
      </div>
    </div>
    <div class="aws-text-box section" readability="41">
      <div class=" " readability="35">
        <p>The data are organized using a directory structure based on each
scene's path and row. For instance, the files for Landsat
scene LC08_L1TP_139045_20170304_20170316_01_T1 are available in the
following location: s3://landsat-
pds/c1/L8/139/045/LC08_L1TP_139045_20170304_20170316_01_T1</p>
        <p>The <code>c1</code> refers to Collection 1, the <code>L8</code>
refers to Landsat 8, <code>139</code> refers to the scene's path,
<code>045</code> refers to the scene's row, and the final directory
matches the product's identifier, which uses the following naming
convention: LXSS_LLLL_PPPRRR_YYYYMMDD_yyymmdd_CC_TX, in which:<br/></p>
        <ul><li>L = Landsat</li>
        <li>X = Sensor</li>
        <li>SS = Satellite</li>
        <li>PPP = WRS path</li>
        <li>RRR = WRS row</li>
        <li>YYYYMMDD = Acquisition date</li>
        <li>yyymmdd = Processing date</li>

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    <li>CC = Collection number<br/></li>
    <li>TX = Collection category</li>
</ul>
<p>In this case, the scene corresponds to WRS path 139, WRS row 045,
and was taken on March 4th, 2017.</p>
<p>Each scene's directory includes:</p>
<ul><li>a .TIF GeoTIFF for each of the scene's up to 12 bands
(note that the GeoTIFFs include 512x512 internal tiling)</li>
    <li>.TIF.ovr overview file for each .TIF (useful in GDAL based
applications)</li>
    <li>a _MTL.txt metadata file</li>
    <li>a small rgb preview jpeg, 3 percent of the original size</li>
    <li>a larger rgb preview jpeg, 15 percent of the original size</li>
    <li>an index.html file that can be viewed in a browser to see the
RGB preview and links to the GeoTIFFs and metadata files</li>
</ul>
<p>For instance, the files associated with
scene#160;LC08_L1TP_139045_20170304_20170316_01_T1 are available at:</p>
<p>s3://landsat-
pds/c1/L8/139/045/LC08_L1TP_139045_20170304_20170316_01_T1/</p>
<p>or</p>
<p><a
href="https://landsat-pds.s3.amazonaws.com/c1/L8/139/045/LC08_L1TP_139045_20
170304_20170316_01_T1/index.html">https://landsat-pds.s3.amazonaws.com/c1/L8
/139/045/LC08_L1TP_139045_20170304_20170316_01_T1/index.html</a></p>
<p>A gzipped csv describing all available scenes is available at</p>
<p>s3://landsat-pds/scene_list.gz</p>
<p>or</p>
<p><a
href="http://landsat-pds.s3.amazonaws.com/c1/L8/scene_list.gz">https://lands
at-pds.s3.amazonaws.com/c1/L8/scene_list.gz</a></p>
<p>If you use the AWS Command Line Interface, you can access the
bucket with this simple command:</p>
</div>
</div>
<div class="aws-code parbase section text" readability="31">
<pre>aws s3 ls landsat-pds/c1</pre>
</div>
<div class="aws-text-box section" readability="32">
<div class=" " readability="9">
<p><i>Note that Collection 1 Real-Time data will be stored on a
rolling, 1 month basis to be backfilled as Tier 1 data becomes
available.</i><br/></p>
</div>
</div>
<div class="title-wrapper section">
<div class="row title">
<p>
<h3 id="Pre-Collection_Data"> <a name="Pre-Collection_Data"> Pre-
Collection Data</a> </h3>
</p>

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    </div>
  </div>
  <div class="aws-text-box section" readability="41">
    <div class=" " readability="33">
      <p><i>Note that Pre-Collection data is no longer being provided by
USGS after 5/1/2017.</i></p>
      <p>The data are organized using a directory structure based on each
scene's path and row. For instance, the files for Landsat scene
LC81390452014295LGN00 are available in the following location: s3://landsat-
pds/L8/139/045/LC81390452014295LGN00/</p>
      <p>The &#8220;L8&#8221; directory refers to Landsat 8,
&#8220;139&#8221; refers to the scene's path, &#8220;045&#8221; refers
to the scene's row, and the final directory matches the scene's
identifier, which uses the following naming convention:
LXSPPPRRRRYYYYDDGSIVV, in which:<br/></p>
      <ul><li>L = Landsat<br/></li>
      <li>X = Sensor<br/></li>
      <li>S = Satellite<br/></li>
      <li>PPP = WRS path<br/></li>
      <li>RRR = WRS row<br/></li>
      <li>YYYY = Year<br/></li>
      <li>DDD = Julian day of year<br/></li>
      <li>GSI = Ground station identifier<br/></li>
      <li>VV = Archive version number</li>
      </ul>
      <p>In this case, the scene corresponds to WRS path 139, WRS row 045,
and was taken on the 295th day of 2014.</p>
      <p>Each scene's directory includes:</p>
      <ul><li>a .TIF GeoTIFF for each of the scene's up to 12 bands
(note that the GeoTIFFs include 512x512 internal tiling)</li>
      <li>.TIF.ovr overview file for each .TIF (useful in GDAL based
applications)</li>
      <li>a _MTL.txt metadata file</li>
      <li>a small rgb preview jpeg, 3 percent of the original size</li>
      <li>a larger rgb preview jpeg, 15 percent of the original size</li>
      <li>an index.html file that can be viewed in a browser to see the
RGB preview and links to the GeoTIFFs and metadata files</li>
      </ul>
      <p>For instance, the files associated with scene
LC81390452014295LGN00 are available at:</p>
      <p>s3://landsat-pds/L8/139/045/LC81390452014295LGN00/</p>
      <p>or</p>
      <p><a
href="https://landsat-pds.s3.amazonaws.com/L8/139/045/LC81390452014295LGN00/
index.html">https://landsat-pds.s3.amazonaws.com/L8/139/045/LC81390452014295
LGN00/index.html</a></p>
      <p>A gzipped csv describing all available scenes is available at</p>
      <p>s3://landsat-pds/scene_list.gz</p>
      <p>or</p>
      <p><a
href="https://landsat-pds.s3.amazonaws.com/scene_list.gz">https://landsat-pd

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s.s3.amazonaws.com/scene_list.gz</p>

<p>If you use the AWS Command Line Interface, you can access the bucket with this simple command:</p>

</div>

</div>

<div class="aws-code parbase section text" readability="31">

<pre readability="4"><p>aws s3 ls landsat-pds
</p>

</pre>

</div>

<div class="title-wrapper section" readability="0">

<div class="row title" readability="0">

<p>

<h3 id="Receive_Data_Notifications_with_Amazon_SNS"> Receive Data Notifications with Amazon SNS </h3>

</p>

</div>

</div>

<div class="aws-text-box section" readability="28">

<div class=" " readability="13">

<p>The following ARN is for an Amazon SNS topic that provides notifications whenever a new Landsat scene has been added to Landsat on AWS:</p>

<p>arn:aws:sns:us-west-2:274514004127:NewSceneHTML</p>

<p>This topic publishes an Amazon S3 event message whenever a scene-level index.html file has been created, which is the last step in the process to make scene data available on Amazon S3. It will only accept subscriptions via Amazon SQS or AWS Lambda.</p>

<p>Learn more about subscribing to SNS topics.</p>

</div>

</div>

<div class="table-wrapper section" readability="30">

<p>

<table width="501" cellpadding="1" border="0" height="62" jcr:primarytype="nt:unstructured"><tbody readability="6"><tr readability="0"><td width="30%">Source
</td>

<td>U.S. Geological Survey
</td>

</tr><tr readability="4"><td width="30%">Category</td>
<td>GIS, Sensor Data, Satellite Imagery, Natural Resource
</td>

</tr><tr><td width="30%">Format</td>

<td>GeoTIFF, txt, jpg
</td>

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        </tr><tr readability="7"><td>License</td>
        <td>There are no restrictions on the use of data received from
the U.S. Geological Survey's Earth Resources Observation and Science (EROS)
Center or NASA's Land Processes Distributed Active Archive Center (LP DAAC),
unless expressly identified prior to or at the time of receipt. More
information on licensing and Landsat data citation is available from <a
ad hoc enable="false"
href="http://eros.usgs.gov/about-us/data-citation">USGS</a>.<br/></td>
        </tr><tr><td>Storage Service</td>
        <td>Amazon S3</td>
        </tr><tr readability="1"><td>Location</td>
        <td>s3://landsat-pds in US West (Oregon) Region<br/></td>
        </tr><tr readability="1"><td>Update Frequency</td>
        <td>New Landsat 8 scenes are added regularly as soon as they are
available</td>
        </tr></tbody></table></p>
</div>
<div class="title-wrapper section">
    <div class="row title">
        <p>
            <h3 id="landsat-util"> <a
href="https://github.com/developmentseed/landsat-util" name="landsat-util">
landsat-util</a> </h3>
        </p>
    </div>
</div>
<div class="aws-text-box section" readability="21">
    <div class=" " readability="7">
        <p><a href="http://www.developmentseed.org">Development Seed</a>
manages <a
href="https://github.com/developmentseed/landsat-util">landsat-util</a>, a
popular command line utility that makes it easy to search, download, and
process Landsat imagery. landsat-util has been updated to access Landsat on
AWS.</p>
        <p><a
href="http://developmentseed.org/blog/2015/03/19/aws-landsat-archive/">Learn
how Landsat on AWS helps Development Seed create Landsat power
tools</a>.</p>
    </div>
</div>
<div class="title-wrapper section">
    <div class="row title">
        <p>
            <h3 id="Esri_ArcGIS"> <a
href="http://www.esri.com/landing-pages/software/landsat/unlock-earths-secre
ts" name="Esri_ArcGIS"> Esri ArcGIS</a> </h3>
        </p>
    </div>
</div>
<div class="aws-text-box section" readability="29">
    <div class=" " readability="8">

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<p><a href="http://www.esri.com">Esri</a> has created a
demonstration of how ArcGIS Online can quickly visualize Landsat on AWS data
for visualization and analysis within the browser.</p>
<p><a
href="http://www.esri.com/landing-pages/software/landsat/unlock-earths-secre
ts">Visit Esri's site</a> to see how powerful and beautiful Landsat
data can be.<br/></p>
</div>
</div>
<div class="title-wrapper section">
  <div class="row title">
    <p>
      <h3 id="Mapbox_Landsat-live"> <a
href="https://www.mapbox.com/blog/landsat-live-live/" name="Mapbox_Landsat-
live"> Mapbox Landsat-live</a> </h3>
    </p>
  </div>
</div>
<div class="aws-text-box section" readability="25">
  <div class=" " readability="8">
    <p><a href="https://www.mapbox.com/">Mapbox</a> uses Landsat on AWS
to power Landsat-live, a browser-based map that is constantly refreshed with
the latest imagery from the Landsat 8 satellite.</p>
    <p><a href="https://www.mapbox.com/blog/landsat-live-live/">Visit
Mapbox to explore Landsat-live</a>.<br/></p>
  </div>
</div>
<div class="title-wrapper section" readability="0">
  <div class="row title" readability="0">
    <p>
      <h3 id="MATLAB_Data_Explorer"> <a
href="http://blogs.mathworks.com/steve/2015/03/19/matlab-landsat-8-aws/"
name="MATLAB_Data_Explorer"> MATLAB Data Explorer</a> </h3>
    </p>
  </div>
</div>
<div class="aws-text-box section" readability="24">
  <div class=" " readability="9">
    <p><a href="http://www.mathworks.com/">MathWorks</a> has created a
freely-downloadable tool for accessing, processing, and visualizing Landsat
on AWS data in MATLAB. With this tool, you can create a map display of scene
locations with markers that show each scene's metadata.</p>
    <p><a
href="http://blogs.mathworks.com/steve/2015/03/19/matlab-landsat-8-aws/">Lea
rn more about the tool and watch a demo video of it on the MathWorks
blog</a>.<br/></p>
  </div>
</div>
<div class="title-wrapper section" readability="0">
  <div class="row title" readability="0">
    <p>
```

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    <h3 id="EOS_DA_Landsat_Viewer"> <a href="http://lv.eosda.com"
name="EOS_DA_Landsat_Viewer"> EOS DA Landsat Viewer</a> </h3>
    </p>
    </div>
  </div>
  <div class="aws-text-box section" readability="27">
    <div class=" " readability="10">
      <p><a href="http://eosda.com">EOS Data Analytics</a> has
created a web application for quick search for Landsat scenes on AWS with
support of various filters and viewing any scene with any scale (zoom
factor) using any of the band combinations, as well as calculation of
spectral indexes on the fly.</p>
      <p><a href="http://lv.eosda.com/">Explore the Earth with EOS DA
Landsat Viewer</a>.<br/></p>
    </div>
  </div>
  <div class="title-wrapper section">
    <div class="row title">
      <p>
        <h3 id="Planet_Labs"> <a
href="https://www.planet.com/pulse/planet-labs-celebrates-landsat-8-data-is-
finally-available-on-amazon-web-services/" name="Planet_Labs"> Planet
Labs</a> </h3>
      </p>
    </div>
  </div>
  <div class="aws-text-box section" readability="19">
    <div class=" " readability="7">
      <p><a href="https://www.planet.com/">Planet Labs</a> uses Landsat on
AWS for image rectification, as a reference point for its own Earth
observing satellites, and to create accurate and timely mosaics.</p>
      <p><a
href="https://www.planet.com/pulse/planet-labs-celebrates-landsat-8-data-is-
finally-available-on-amazon-web-services/">Learn how Planet Labs uses
Landsat on AWS to quickly create better products for its
customers</a>.<br/></p>
    </div>
  </div>
  <div class="aws-text-box section" readability="28">
    <div class=" " readability="6">
      <p>Please post on the OSGeo <a target="_blank"
href="https://lists.osgeo.org/mailman/listinfo/landsat-pds">landsat-pds</a>
list if there are any questions or concerns about this dataset.</p>
    </div>
  </div>
  <div class="aws-text-box section" readability="28">
    <div class=" " readability="10">
      <p>Educators, researchers and students can apply for free
promotional credits to take advantage of Public Datasets on AWS. If you have
a research project that could take advantage of Landsat on AWS, you can
apply for <a href="https://aws.amazon.com/earth/research-credits/">Earth on

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AWS Cloud Credits for Research.
</p>
</div>
</div>
</div>

</html>

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