ACCESS NWP Data

User guide

NOTE: The Bureau is currently upgrading the ACCESS model from the APS2 to APS3 model suite. This user guide will be updated as each model is commissioned and made available with updates to the relevant details.


Models

<table>
<thead>
<tr>
<th>Operational Model Version</th>
<th>Name</th>
<th>Domain</th>
<th>Resolution</th>
<th>Runs per day</th>
<th>Forecast Range</th>
<th>Time Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS3</td>
<td>ACCESS-G3</td>
<td>Global; Regional sub-domain; Australian sub-domain</td>
<td>~13km</td>
<td>4</td>
<td>00 and 12Z Runs Up to +240 hours; 06 and 18Z Runs Up to +72 hours</td>
<td>Single Level Fields; 1 hour to 240 hours; Hybrid &amp; Pressure Level Fields; 3 hours to 72 hours, 6 hours thereafter</td>
</tr>
<tr>
<td>APS2</td>
<td>ACCESS-C2</td>
<td>Brisbane, Sydney, Adelaide, Perth, Darwin, Vic/Tas</td>
<td>~1.5km</td>
<td>4</td>
<td>00, 06, 12Z Runs Up to +36 hours; 18Z Runs Up to +42 hours</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

Registered User Bundles

- IDBY0001 – ACCESS-G - full domain (global) – three-dimensional
- IDBY0002 – ACCESS-G - Australian sub-domain – three-dimensional
- IDBY0021 – ACCESS-G - full domain (global) – surface only
- IDBY0022 – ACCESS-G - Australian sub-domain – surface only
- IDBY0003 – ACCESS-C - all domains – three-dimensional
- IDBY0023 – ACCESS-C - all domains – surface only

For pricing and more information on bundles, please refer to the Registered User catalogue.

Formats
Domain

Figure 1 below shows the Regional sub-domain and Australian sub domain of the ACCESS G3 model.

Figure 1 - ACCESS G domain, Regional and Australian sub domains

Figure 2 below shows a comparison of the current APS2 (C2) domains (dashed blue lines) and the future APS3 (C3) domains (black lines).
<table>
<thead>
<tr>
<th>Name</th>
<th>Full domain</th>
<th>Sub-domains</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCESS-G</td>
<td>full globe</td>
<td>Australian 95.010° to 169.893°, -54.902° to 4.980°</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regional 64.951° to 184.482°, -64.980° to 16.934°</td>
</tr>
<tr>
<td>ACCESS-C2 (Sydney)</td>
<td>147.000° to 155.028°; -38.000 to -29.972°</td>
<td>N/A</td>
</tr>
<tr>
<td>ACCESS-C2 (Brisbane)</td>
<td>148.000° to 156.028°; -31.000° to -22.036°</td>
<td>N/A</td>
</tr>
<tr>
<td>ACCESS-C2 (Vic/Tas)</td>
<td>139.000° to 150.988°; -46.000° to -33.004°</td>
<td>N/A</td>
</tr>
<tr>
<td>ACCESS-C2 (Perth)</td>
<td>112.000° to 122.980°; -37.000° to -28.036°</td>
<td>N/A</td>
</tr>
<tr>
<td>ACCESS-C2 (Adelaide)</td>
<td>131.000° to 141.980°; -39.500° to 29.528°</td>
<td>N/A</td>
</tr>
<tr>
<td>ACCESS-C2 (Darwin)</td>
<td>16.0000°S to 07.9810°S, 128.5000°E to 140.0020°E</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Parameters

Parameters available as single level fields are:

- 10m wind gust
- 10m wind u component
- 10m wind v component
- Accumulated convective rainfall
- Accumulated convective snowfall
- Accumulated evaporation
- Accumulated large scale rainfall
- Accumulated large scale snowfall
- Accumulated precipitation
- Average downwards longwave radiation at the surface
- Average downwards shortwave radiation at the surface
- Average incoming shortwave radiation flux
- Average mean sea level pressure
- Average meridional wind at 10m
- Average net longwave radiation at surface
- Average net shortwave radiation at surface
- Average outgoing longwave radiation
- Average rate of evaporation over open sea
- Average screen level air temperature
- Average screen level specific humidity
- Average surface latent heat flux
- Average surface meridional wind stress
- Average surface sensible heat flux
- Average surface shortwave diffuse radiation flux
- Average surface shortwave direct radiation flux
- Average surface zonal wind stress
- Average total cloud coverage
- Average total surface moisture flux
- Average zonal wind at 10m
- Canopy water content
- Convective cloud-base pressure
- Convective cloud-top pressure
- Fog fraction
- High cloud cover
- Horizontal visibility (incl precip)
- Land mask
- Low cloud cover
- Mean sea level pressure
- Meridional wind at the 50m rho level
- Middle cloud cover
- Planetary boundary layer height
- Precipitable water
- Probability of horizontal visibility less than 5 km (incl precip)
- Screen level dewpoint temperature
- Screen level max temperature
- Screen level min temperature
- Screen level relative humidity w.r.t. water
- Screen level specific humidity
- Screen level temperature
- Soil moisture available for transpiration
- Soil moisture content in a layer
- Soil moisture content layer 2
- Soil moisture content layer 3
- Soil moisture content layer 4
- Soil temperature in a layer
- Soil temperature layer 2
- Soil temperature layer 3
- Soil temperature layer 4
- Surface latent heat flux
- Surface meridional wind stress
- Surface pressure
- Surface roughness length for momentum
- Surface sensible heat flux
- Surface temperature
- Surface zonal wind stress
- Topography height
- Total cloud cover
- Zonal wind at the 50m rho level

Parameters available as model and pressure level fields are:

- Cloud specific ice water content
- Cloud specific liquid water content
- Dew point
- Geopotential height
- Meridional wind
- Relative humidity
- Specific humidity
- Temperature
- Vertical velocity
- Zonal wind
Tropical Cyclone Tracks

From the APS3 version, ACCESS-G provides tropical cyclone track information for cyclones originating the Darwin RSMC domain in CXML format.

It is critical to note that ACCESS-G tropical cyclone tracks are model data only. The Bureau of Meteorology also produces CXML format messages of its official tropical cyclone warnings. See this guide for more information on the official tracks.

Track files are named:
IDY26000.tcn-track.all.xml

Where $n$ corresponds to the system number (valid values: 1,2,3).

Information is also available in .txt and .html format.

Track files will appear in the /fwo subdirectory.


Publishing Times

Approximate FTP upload times for full model runs are as follows:

<table>
<thead>
<tr>
<th></th>
<th>00UTC</th>
<th>06UTC</th>
<th>12UTC</th>
<th>18UTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCESS-G</td>
<td>0730UTC</td>
<td>1300UTC</td>
<td>1930UTC</td>
<td>0100UTC</td>
</tr>
<tr>
<td>ACCESS-C</td>
<td>0320UTC</td>
<td>0930UTC</td>
<td>1520UTC</td>
<td>2115UTC</td>
</tr>
</tbody>
</table>

Additional Information

Detailed information on ACCESS model data, including parameters and file names, is provided on the Bureau’s website: http://www.bom.gov.au/nwp/doc/access/NWPData.shtml.