ACCESS-R: single-level "pres" fields

A number of raw and post-processed NWP products are available as outputs from the Australian Community Climate Earth-System Simulator (ACCESS) suite of Numerical Weather Prediction models which are run routinely by the Bureau National Operations Centre (BNOC). This document describes the content of the ACCESS-R (version APS1) IDY25300.pres.surf.YYYYMMDDHH.HHH.surface series of products.

For background information about ACCESS please refer to the top-level ACCESS NWP technical data documentation page. If you require further information or assistance about ACCESS NWP products contact the Bureau's Registered User Services section.

Model summary

ACCESS-R covers an Australian regional domain, has a resolution of about 12 km and is run four times per day (00Z, 06Z, 12Z & 18Z basetimes) out to a forecast hour (FHR) of +72. This model is nested in the ACCESS-G model and consists of both an assimilation and forecast component.

NWP data filename convention

All NWP files in this product series have names that conform to the following convention:

IDY25300.pres.surf.YYYYMMDDHH.HHH.surface.grb2 or IDY25300.pres.surf.YYYYMMDDHH.HHH.surface.nc4

where

YYYYMMDDHH: Base-date of model run in UTC time. YYYY = year, MM = month, DD = day, HH = hour
HHH: Forecast hour. A FHR of 000 is the analysis time-step.

Horizontal grid geometries

<table>
<thead>
<tr>
<th>Variant [IDY code]</th>
<th>Resolution [Lon x Lat]</th>
<th>Domain limits [W to E, N to S (Lon x Lat grid points)]</th>
<th>Parameters [NC Vars]</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDY25300</td>
<td>0.110 by 0.110</td>
<td>65.000 to 184.570, -65.000 to 16.950 (1088 x 746)</td>
<td>All</td>
</tr>
<tr>
<td>IDY25301</td>
<td>0.110 by 0.110</td>
<td>95.030 to 169.940, -54.990 to 4.960 (682 x 546)</td>
<td>All</td>
</tr>
</tbody>
</table>

Please note that

- Latitude values in GRIB and NetCDF files are ordered North to South while longitude values are ordered West to East.
- Longitudes always lie in the range 0.0 to 360.0 degrees. Longitudes can be transformed to lie between -180 and +180 degrees by subtracting 360 degrees from any longitude values greater than 180.
Time steps

Forecast hours of single-level fields:

0 to 75 by 1

Parameters

The following fields are included in this product series. Note that the "G2 d.c.n" table column refers to a field's GRIB2 'discipline','parameterCategory','parameterNumber' metadata. For more information see GRIB2 format notes.

Single-level fields

<table>
<thead>
<tr>
<th>G2 d.c.n</th>
<th>NetCDF var</th>
<th>Steps</th>
<th>G2 Units</th>
<th>NC Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3.0</td>
<td>sfc_pres</td>
<td>All</td>
<td>Pa</td>
<td>Pa</td>
<td>Surface pressure</td>
</tr>
</tbody>
</table>

Explanation of steps column terms

- **All**: Parameter available at all time-steps
- **fhr...**: Parameter available from fhr onward

Notes on specific NWP file-formats

For technical notes about the GRIB2 encoding of ACCESS data, please refer to GRIB2 format notes. For technical notes about the NetCDF4 encoding of ACCESS data, please refer to NetCDF format notes.

Appendix A - Extended Field Descriptions

Extended description of single-level fields

<table>
<thead>
<tr>
<th>G2 d.c.n</th>
<th>NetCDF var</th>
<th>Detailed description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3.0</td>
<td>sfc_pres</td>
<td>Atmospheric pressure at the surface. [Pa]</td>
</tr>
</tbody>
</table>

Please note:

- Fields in the above tables are listed in the same order as shown in the Parameters section of this document.
- Units in the above table refer to NetCDF fields. In some cases fields were scaled/offset to convert to SI units for WMO GRIB2 compliance.
- The nature of fields can not always be deduced easily from their NetCDF variable names. It is always safest to refer to the detailed description of a parameter.