


```

UU      UU      TTTTTTTTTT  IIIIII  LL      DDDDDDDD  EEEEEEEEE  FFFFFFFF
UU      UU      TTTTTTTTTT  IIIIII  LL      DDDDDDDD  EEEEEEEEE  FFFFFFFF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EEEEEEE    FFFFFFFF
UU      UU      TT          II       LL      DD      DD  EEEEEEE    FFFFFFFF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EE          FF
UU      UU      TT          II       LL      DD      DD  EE          FF
UUUUUUUU  TT          IIIIII  LLLLLLLLLL DDDDDDDD EEEEEEEEE  FF
UUUUUUUU  TT          IIIIII  LLLLLLLLLL DDDDDDDD EEEEEEEEE  FF

```

```

RRRRRRR  EEEEEEEEE  QQQQQQ
RRRRRRR  EEEEEEEEE  QQQQQQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RRRRRRR  EEEEEEEEE  QQ      QQ
RRRRRRR  EEEEEEEEE  QQ      QQ
RR  RR  EE          QQ  QQ  QQ
RR  RR  EE          QQ  QQ  QQ
RR  RR  EE          QQ      QQ
RR      RR  EEEEEEEEE  QQQQ  QQ
RR      RR  EEEEEEEEE  QQQQ  QQ

```


Commonly used definitions for VMS modules written in BLISS

Version: 'V04-000'

```

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```

++ ABSTRACT:

This is the common require file for any module written in BLISS

ENVIRONMENT:

VAX/VMS operating system.

AUTHOR: Tim Halvorsen, Feb 1980

MODIFIED BY:

Equated symbols

```
LITERAL
  true      = 1,           ! boolean true
  false     = 0,           ! boolean false
  ok        = 1,           ! success return code
  error     = 2,           ! error return code
  quad     = 8;           ! quadword allocation definition
```

Define structure type for VMS structures

```
STRUCTURE
  bblock [o, p, s, e; n] =
    [n]
    (bblock+o)<p,s,e>;

MACRO
  descriptor [] =           ! Generate a static string descriptor
    UPLIT (%CHARCOUNT (%STRING (%REMAINING))),
    UPLIT BYTE (%STRING (%REMAINING))) %;

MACRO
  own_descriptor [] =       ! Generate the actual static string descriptor
    -BBLOCK [8] INITIAL(%CHARCOUNT(%STRING(%REMAINING))),
    UPLIT BYTE (%STRING(%REMAINING))) %;

MACRO
  return_if_error(command) =
    BEGIN
    LOCAL
      status;

    status = command;
    IF NOT .status
    THEN
      RETURN .status;
    ENDX;

MACRO
  signal_if_error(command) =
    BEGIN
    LOCAL
      status;

    status = command;
    IF NOT .status
    THEN
      BEGIN
        SIGNAL(.status);
        RETURN .status;
      END;
    ENDX;
```

Macro to implement a function (f) of the message severity level that maps the various severity levels such that arithmetic comparisons of the mapped values (f(severity)) yield a order of precedence that is intuitively acceptable:

ERROR NAME	OLDVAL		NEWVAL
F(SUCCESS)	1	-->	0
F(INFORMATIONAL)	3	-->	2
F(WARNING)	0	-->	3
F(ERROR)	2	-->	5
F(SEVERE_ERROR)	4	-->	7

```
MACRO
severity level (status) =
  BEGIN
  LOCAL code: BBLOCK [LONG];
  code = status;
  .code [sts$v_severity] - (4 * .code [sts$v_success]) + 3
  ENDX;
```

```
MACRO
cli$external(prefix) =
  %IF %DECLARED(%QUOTE %QUOTE cli$prefix)
  %THEN UNDECLARE %QUOTE %QUOTE cli$prefix; %FI
  MACRO cli$prefix = prefix %QUOTE %;
  EXTERNAL LITERAL
  cli$external_loop(%REMAINING)%

cli$external_loop[name] =
  %NAME(cli$prefix,name): UNSIGNED(8)%;
```

```
MACRO
$external_literal(symbol) =
  BEGIN
  %IF NOT %DECLARED(symbol) %THEN EXTERNAL LITERAL symbol
  %IF %LENGTH GTR 1 %THEN : %REMAINING %FI; %FI
  symbol
  ENDX;
```

```
MACRO
$fab_dev(dev bit) = ! Access FAB$L_DEV bits of FAB block
  $BYTEOFFSET(fab$l dev),
  $BITPOSITION(%NAME('dev$v_',dev_bit)),1,0%;
```

SSHR_MESSAGES - a macro which defines facility-specific message codes which are based on the system-wide shared message codes.

```
SSHR_MESSAGES( name, code, (msg,severity), ... )
```

where:

:"name" is the name of the facility (e.g., COPY)
:"code" is the corresponding facility code (e.g., 103)
:"msg" is the name of the shared message (e.g., BEGIN)
:"severity" is the desired message severity (e.g., 1, 0, 2)

```
MACRO
$SHR_MESSAGES( FACILITY_NAME, FACILITY_CODE ) =
  [ LITERAL
  SHR$MSG_IDS( FACILITY_NAME, FACILITY_CODE, %REMAINING ); %,
  SHR$MSG_IDS( FACILITY_NAME, FACILITY_CODE ) [ VALUE ] =
  SHR$MSG_CALC( FACILITY_NAME, FACILITY_CODE, %REMOVE(VALUE) ) %,
  SHR$MSG_CALC( FACILITY_NAME, FACILITY_CODE, MSG_ID, SEVERITY ) =
  %NAME( FACILITY_NAME, '$', MSG_ID ) = %NAME( 'SHR$', MSG_ID ) + FACILITY_CODE*65536 +
  %IF %DECLARED( %NAME( 'STSSK', SEVERITY ) )
  %THEN %NAME( 'STSSK', SEVERITY )
  %ELSE SEVERITY %FI %;
```


0155	0156	0157	0158	0159	0160	0161	0162	0163	0164	0165	0166	0167	0168	0169	0170	0171	0172	0173	0174	0175	0176	0177	0178	0179	0180	0181	0182	0183	0184	0185	0186	0187	0188	0189	0190	0191	0192	0193	0194	0195	0196	0197	0198	0199	0200	0201	0202	0203	0204	0205	0206	0207	0208	0209	0210	0211	0212	0213	0214	0215	0216	0217	0218	0219	0220	0221	0222	0223	0224	0225	0226	0227	0228	0229	0230	0231	0232	0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247	0248	0249	0250	0251	0252	0253	0254	0255	0256	0257	0258	0259	0260	0261	0262	0263	0264	0265	0266	0267	0268	0269	0270	0271	0272	0273	0274	0275	0276	0277	0278	0279	0280	0281	0282	0283	0284	0285	0286	0287	0288	0289	0290	0291	0292	0293	0294	0295	0296	0297	0298	0299	0300	0301	0302	0303	0304	0305	0306	0307	0308	0309	0310	0311	0312	0313	0314	0315	0316	0317	0318	0319	0320	0321	0322	0323	0324	0325	0326	0327	0328	0329	0330	0331	0332	0333	0334	0335	0336	0337	0338	0339	0340	0341	0342	0343	0344	0345	0346	0347	0348	0349	0350	0351	0352	0353	0354	0355	0356	0357	0358	0359	0360	0361	0362	0363	0364	0365	0366	0367	0368	0369	0370	0371	0372	0373	0374	0375	0376	0377	0378	0379	0380	0381	0382	0383	0384	0385	0386	0387	0388	0389	0390	0391	0392	0393	0394	0395	0396	0397	0398	0399	0400	0401	0402	0403	0404	0405	0406	0407	0408	0409	0410	0411	0412	0413	0414	0415	0416	0417	0418	0419	0420	0421	0422	0423	0424	0425	0426	0427	0428	0429	0430	0431	0432	0433	0434	0435	0436	0437	0438	0439	0440	0441	0442	0443	0444	0445	0446	0447	0448	0449	0450	0451	0452	0453	0454	0455	0456	0457	0458	0459	0460	0461	0462	0463	0464	0465	0466	0467	0468	0469	0470	0471	0472	0473	0474	0475	0476	0477	0478	0479	0480	0481	0482	0483	0484	0485	0486	0487	0488	0489	0490	0491	0492	0493	0494	0495	0496	0497	0498	0499	0500	0501	0502	0503	0504	0505	0506	0507	0508	0509	0510	0511	0512	0513	0514	0515	0516	0517	0518	0519	0520	0521	0522	0523	0524	0525	0526	0527	0528	0529	0530	0531	0532	0533	0534	0535	0536	0537	0538	0539	0540	0541	0542	0543	0544	0545	0546	0547	0548	0549	0550	0551	0552	0553	0554	0555	0556	0557	0558	0559	0560	0561	0562	0563	0564	0565	0566	0567	0568	0569	0570	0571	0572	0573	0574	0575	0576	0577	0578	0579	0580	0581	0582	0583	0584	0585	0586	0587	0588	0589	0590	0591	0592	0593	0594	0595	0596	0597	0598	0599	0600	0601	0602	0603	0604	0605	0606	0607	0608	0609	0610	0611	0612	0613	0614	0615	0616	0617	0618	0619	0620	0621	0622	0623	0624	0625	0626	0627	0628	0629	0630	0631	0632	0633	0634	0635	0636	0637	0638	0639	0640	0641	0642	0643	0644	0645	0646	0647	0648	0649	0650	0651	0652	0653	0654	0655	0656	0657	0658	0659	0660	0661	0662	0663	0664	0665	0666	0667	0668	0669	0670	0671	0672	0673	0674	0675	0676	0677	0678	0679	0680	0681	0682	0683	0684	0685	0686	0687	0688	0689	0690	0691	0692	0693	0694	0695	0696	0697	0698	0699	0700	0701	0702	0703	0704	0705	0706	0707	0708	0709	0710	0711	0712	0713	0714	0715	0716	0717	0718	0719	0720	0721	0722	0723	0724	0725	0726	0727	0728	0729	0730	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	0755	0756	0757	0758	0759	0760	0761	0762	0763	0764	0765	0766	0767	0768	0769	0770	0771	0772	0773	0774	0775	0776	0777	0778	0779	0780	0781	0782	0783	0784	0785	0786	0787	0788	0789	0790	0791	0792	0793	0794	0795	0796	0797	0798	0799	0800	0801	0802	0803	0804	0805	0806	0807	0808	0809	0810	0811	0812	0813	0814	0815	0816	0817	0818	0819	0820	0821	0822	0823	0824	0825	0826	0827	0828	0829	0830	0831	0832	0833	0834	0835	0836	0837	0838	0839	0840	0841	0842	0843	0844	0845	0846	0847	0848	0849	0850	0851	0852	0853	0854	0855	0856	0857	0858	0859	0860	0861	0862	0863	0864	0865	0866	0867	0868	0869	0870	0871	0872	0873	0874	0875	0876	0877	0878	0879	0880	0881	0882	0883	0884	0885	0886	0887	0888	0889	0890	0891	0892	0893	0894	0895	0896	0897	0898	0899	0900	0901	0902	0903	0904	0905	0906	0907	0908	0909	0910	0911	0912	0913	0914	0915	0916	0917	0918	0919	0920	0921	0922	0923	0924	0925	0926	0927	0928	0929	0930	0931	0932	0933	0934	0935	0936	0937	0938	0939	0940	0941	0942	0943	0944	0945	0946	0947	0948	0949	0950	0951	0952	0953	0954	0955	0956	0957	0958	0959	0960	0961	0962	0963	0964	0965	0966	0967	0968	0969	0970	0971	0972	0973	0974	0975	0976	0977	0978	0979	0980	0981	0982	0983	0984	0985	0986	0987	0988	0989	0990	0991	0992	0993	0994	0995	0996	0997	0998	0999
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