```
options ls=80 nocenter nodate;

data indat;
input unit grp r n;
dum1 = (grp=2);
dum2 = (grp=3);
cards;
 1 1  2  43
 2 1  9  51
 3 1  5  44
 4 1 16  71
 5 1  2  24
 6 1  0   7
 7 2 17  19
 8 2 43  56
 9 2 79  87
10 2 50  55
11 2  9  10
12 3 11  13
13 3 47  62
14 3 90 104
15 3 46  51
16 3  9  11
;

proc nlmixed cov;
parms b0=0.5 b1=0 b2=0 sig2=1;
eta = b0 + b1*dum1 + b2*dum2;
pi = 1 - 1/(1+exp(eta+z));
model r ~ binomial(n,pi);
random z ~ normal(0,sig2) subject=unit;
run;
```

The NLMIXED Procedure

Specifications

Data Set	WORK.INDAT
Dependent Variable	r
Distribution for Dependent Variable	Binomial
Random Effects	z
Distribution for Random Effects	Normal
Subject Variable	unit
Optimization Technique	Dual Quasi-Newton
Integration Method	Adaptive Gaussian Quadrature

Dimensions

Observations Used	16
Observations Not Used	0
Total Observations	16
Subjects	16
Max Obs Per Subject	1
Parameters	4
Quadrature Points	5

Parameters

b0	b1	b2	sig2	NegLogLike
0.5	0	0	1	63.3642795

Iteration History

Iter	Calls	NegLogLike	Diff	MaxGrad	Slope
1	3	54.2189252	9.145354	2.439884	-89.191
2	5	47.1613681	7.057557	5.483632	-4.98796
[SNIP]					
3	7	41.9439682	5.2174	3.090085	-17.6124
14	32	34.9999817	9.493E-9	0.000029	-2.05E-8

NOTE: GCONV convergence criterion satisfied.

Fit Statistics

-2 Log Likelihood	70.0
AIC (smaller is better)	78.0
AICC (smaller is better)	81.6
BIC (smaller is better)	81.1

Parameter Estimates

Parameter	Estimate	Standard Error	DF	t Value	Pr > |t|	Alpha	Lower
b0	-1.9117	0.2531	15	-7.55	<.0001	0.05	-2.4511
b1	3.8634	0.3712	15	10.41	<.0001	0.05	3.0721
b2	3.6049	0.3575	15	10.08	<.0001	0.05	2.8429
sig2	0.1064	0.1026	15	1.04	0.3165	0.05	-0.1124

Parameter Estimates

Parameter	Upper	Gradient
b0	-1.3722	0.000012
b1	4.6546	0.000013
b2	4.3669	0.000029
sig2	0.3251	-0.00001

Covariance Matrix of Parameter Estimates

Row	Parameter	b0	b1	b2	sig2
1	b0	0.06405	-0.06664	-0.06548	-0.00819
2	b1	-0.06664	0.1378	0.06864	0.01151
3	b2	-0.06548	0.06864	0.1278	0.01003
4	sig2	-0.00819	0.01151	0.01003	0.01053