

$$\text{Comp. Factor} = \frac{\text{Max \# possible records}}{10^{\text{\# digits}}} = \frac{12}{10^2} = \frac{12}{100} = .12$$

Figure 3 Midsquare Hash Function

KEY	KEY	KEY SQUARE	MIDDLE PORTION	* COMPRESSION FACTOR (0.12)	+ DISPLACEMENT (+21)
1	4023	16184529	84	10	31
2	4031	16248961	48	5	26
3	4011	16088121	88	10	31
4	3971	15768841	68	8	29
5	3812	14531344	31	3	24
6	4214	17757796	57	6	27
7	4241	17986081	86	10	31
8	4146	17189316	89	10	31

AVAILABLE SPACE: (21, 22, ..., 32)
 HASH FUNCTION : MIDSQUARE

$$\frac{32}{21} = 1.5238$$

$$1.5238 + 1 = 2.5238$$

$$2.5238 \times 12 = 30.2856 \approx 30$$